

Specifications of Dell G7 7590

Dimensions and weight

Table 2. Dimensions and weight

Description	Values
Height:	
Front	19.90 mm (0.78 in.)
Rear	18.65 mm (0.73 in.)
Width	364.30 mm (14.34 in.)
Depth	273.40 mm (10.76 in.)
Weight	2.67 kg (5.88 lb)

i | **NOTE:** The weight of your computer depends on the configuration ordered and the manufacturing variability.

Processors

Table 3. Processors

Description	Values	Values
Processors	8 th Generation Intel Core i5-8300HQ	8 th Generation Intel Core i7-8750HQ
Wattage	45 W	45 W
Core count	4	6
Thread count	8	12
Speed	Up to 4.0 GHz	Up to 4.1 GHz
System Cache	8 MB	9 MB
Integrated graphics	Intel UHD Graphics 630	Intel UHD Graphics 630

Chipset

Table 4. Chipset

Description	Values	
Processor	8 th Generation Intel Core i5-8300HQ	8 th Generation Intel Core i7-8750HQ
Chipset	HM370	HM370
DRAM bus width	64-bit	64-bit
Flash EPROM	16 MB	16 MB
PCIe bus	Up to Gen3.0	Up to Gen3.0
External bus frequency	Up to 4 GT/s	Up to 4 GT/s

Operating system

- Windows 10 Home (64-bit)
- Windows 10 Professional (64-bit)
- Ubuntu

 **NOTE: The Ubuntu version varies with region.**

Memory

Table 5. Memory specifications

Description	Values
Slots	Two SODIMM slots
Type	DDR4
Speed	Up to 2666 MHz
Maximum memory	32 GB
Minimum memory	4 GB
Memory size per slot	4 GB, 8 GB, and 16 GB
Configurations supported	<ul style="list-style-type: none">• 4 GB DDR4 at 2666 MHz (1 x 4 GB)• 8 GB DDR4 at 2666 MHz (2 x 4 GB)• 8 GB DDR4 at 2666 MHz (1 x 8 GB)• 12 GB DDR4 at 2666 MHz (1 x 4 GB + 1 x 8 GB)• 16 GB DDR4 at 2666 MHz (2 x 8 GB)• 16 GB DDR4 at 2666 MHz (1 x 16 GB)• 32 GB DDR4 at 2666 MHz (2 x 16 GB)

Ports and connectors

Table 6. Ports and connectors

External:

Network	One RJ-45 port
USB	<ul style="list-style-type: none">One Thunderbolt 3 (USB 3.1 Gen 2 Type-C) port/DisplayPort (only on computers shipped with graphics card NVIDIA GeForce RTX 2060, RTX 2070, or RTX 2080) or one USB 3.1 Gen 2 Type-C port with DisplayPort Alt-Mode (only on computers shipped with graphics card NVIDIA GeForce GTX 1050 Ti)One mini DisplayPort (only on computers shipped with graphics card NVIDIA GeForce RTX 2060, RTX 2070, or RTX 2080)One USB 3.1 Gen 1 with PowerShare portTwo USB 3.1 Gen 1 ports
Audio	One headset (headphone and microphone combo) port
Video	One HDMI 2.0b port
Media card reader	One SD-card slot
Docking port	Supported through the USB Type-C port
Power adapter port	Supported
Security	Wedge-shaped lock slot

Internal:

M.2	<ul style="list-style-type: none">One PCIe NVMe Gen 3x2 slot for M.2 2280 solid-state drive or Intel Optane memoryOne PCIe Gen 3x2 slot for WiFi and Bluetooth combo card
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NOTE: To learn more about the features of different types of M.2 cards, see the knowledge base article [SLN301626](#).

Communications

Ethernet

Table 7. Ethernet specifications

Description	Values
Model number	<ul style="list-style-type: none">Realtek GB LAN for GTX 1050 TiKiller GB E2500V2 for RTX 2060, RTX 2070, or RTX 2080
Transfer rate	10/100/1000 Mbps

Wireless module

Table 8. Wireless module specifications

Description	Values		
Model number	Qualcomm QCA61x4A (DW1820)	Intel 9560 2x2 ac (Intel 9560 2x2 ac (160 MHz)	Rivet Killer 1550 2x2 ac
Transfer rate	Up to 867 Mbps	Up to 1.73 Gbps	Up to 1.73 Gbps
Frequency bands supported	Dual band 2.4 GHz/5 GHz	Dual band 2.4 GHz/5 GHz	Dual band 2.4 GHz/5 GHz
Wireless standards	<ul style="list-style-type: none"> WiFi 802.11a/b/g WiFi 4 (WiFi 802.11n) WiFi 5 (WiFi 802.11ac) 	<ul style="list-style-type: none"> WiFi 802.11a/b/g WiFi 4 (WiFi 802.11n) WiFi 5 (WiFi 802.11ac) 	<ul style="list-style-type: none"> WiFi 802.11a/b/g WiFi 4 (WiFi 802.11n) WiFi 5 (WiFi 802.11ac)
Encryption	<ul style="list-style-type: none"> 64-bit/128-bit WEP AES-CCMP TKIP 	<ul style="list-style-type: none"> 64-bit/128-bit WEP AES-CCMP TKIP 	<ul style="list-style-type: none"> 64-bit/128-bit WEP AES-CCMP TKIP
Bluetooth	Bluetooth 4.2 <i>i</i> NOTE: Bluetooth 4.2 is supported by the latest Windows 10 update.	Bluetooth 5.0 <i>i</i> NOTE: Bluetooth 5.0 is supported by the latest Windows 10 update.	Bluetooth 5.0 <i>i</i> NOTE: Bluetooth 5.0 is supported by the latest Windows 10 update.

Audio

Table 9. Audio specifications

Description	Values
Controller	Realtek ALC3254-CG with support for nahimic audio
Stereo conversion	Supported
Internal interface	High-definition audio interface
External interface	<ul style="list-style-type: none"> Universal audio jack that supports headset/headphone/line-out/microphone/line-in functions Digital-array microphone in camera assembly
Speakers	Two
Internal speaker amplifier	Supported
External volume controls	Supported through keyboard shortcuts
Speaker output:	
Average	2 W

Description	Values
Peak	2.5 W
Subwoofer output	Not supported
Microphone	One

Storage

Your computer supports one of the following configurations:

- One 2.5-inch hard-disk drive
- One M.2 2280 solid-state drive
- One 2.5-inch hard-disk drive and one M.2 2280 solid-state drive
- One 2.5-inch hard-disk drive and one M.2 Intel Optane memory

NOTE: The primary drive of your computer varies with the storage configuration.

For computers:

- with an M.2 drive, the M.2 drive is the primary drive
- without an M.2 drive, the 2.5-inch hard-disk drive is the primary drive

Table 10. Storage specifications

Storage type	Interface type	Capacity
One 2.5-inch Hard-Disk Drive (HDD)	SATA	<ul style="list-style-type: none"> • 500 GB (7200 RPM) • 1 TB (5400 RPM) • 2 TB (5400 RPM) • 1 TB (5400 RPM) + 8 GB hybrid drive
One M.2 2280 solid-state drive	<ul style="list-style-type: none"> • PCIe NVMe 3x2 Class 35 • PCIe NVMe 3x4 Class 40 	<ul style="list-style-type: none"> • Up to 512 GB • Up to 1 TB

NOTE: Hard-disk drive is supported only on the computers shipped with 4-cell battery configuration

Intel Optane memory

Intel Optane memory functions only as a storage accelerator. It neither replaces nor adds to the memory (RAM) installed on your computer.

NOTE: Intel Optane memory is supported on computers that meet the following requirements:

- 7th Generation or higher Intel Core i3/i5/i7 processor
- Windows 10 64-bit version or higher (Anniversary Update)
- Latest version of Intel Rapid Storage Technology driver

Table 11. Intel Optane memory

Description	Values
Type	Storage accelerator
Interface	PCIe NVMe 3.0x2 or 3.0x4

Description	Values
Connector	M.2 2280
Configurations supported	16 GB and 32 GB
Capacity	Up to 32 GB

Media-card reader

Table 12. Media-card reader specifications

Description	Values
Type	One SD-card slot
Cards supported	<ul style="list-style-type: none"> Secure Digital (SD) Secure Digital High Capacity (SDHC) SD Extended Capacity (SDXC)

Keyboard

Table 13. Keyboard specifications

Description	Values
Type	<ul style="list-style-type: none"> Standard non-backlit keyboard Backlit keyboard (optional) Four-zone RGB keyboard (optional)
Layout	QWERTY
Number of keys	<ul style="list-style-type: none"> United States and Canada: 101 keys United Kingdom: 102 keys Japan: 105 keys
Size	<p>X = 19.05 mm key pitch</p> <p>Y = 18.05 mm key pitch</p>
Shortcut keys	For more information on shortcut keys, see Keyboard shortcuts .

Camera

Table 14. Camera specifications

Description	Values
Number of cameras	One
Type	HD RGB camera

Description	Values
Location	Front
Sensor type	CMOS sensor technology
Resolution:	
Still image	0.92 megapixel (HD)
Video	1280 x 720 (HD) at 30 fps
Diagonal viewing angle	74.9 degrees

Touchpad

Table 15. Touchpad specifications

Description	Values
Resolution:	
Horizontal	1229 pixels
Vertical	749 pixels
Dimensions:	
Horizontal	105 mm (4.13 in.)
Vertical	65 mm (2.56 in.)

Touchpad gestures

For more information about touchpad gestures for Windows 10, see the Microsoft knowledge base article [4027871](https://support.microsoft.com/4027871) at support.microsoft.com.

Power adapter

Table 16. Power adapter specifications

Description	Values
Type	130 W 180 W
Diameter (connector)	7.4 mm 7.4 mm
Input voltage	100 VAC-240 VAC 100 VAC-240 VAC
Input frequency	50 Hz-60 Hz 50 Hz-60 Hz
Input current (maximum)	1.80 A/2.50 A 2.34 A
Output current (continuous)	6.70 A 9.23 A

Description	Values	
Rated output voltage	19.50 VDC	19.50 VDC
Temperature range:		
Operating	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)
Storage	-40°C to 70°C (-40°F to 158°F)	-40°C to 70°C (-40°F to 158°F)

Battery

Table 17. Battery specifications

Description	Values	Values
Type	4-cell "smart" lithium-ion/polymer (60 WHr)	6-cell "smart" lithium-ion/polymer (90 WHr)
	<p>NOTE: Hard-disk drive configuration is available only on the computers that are shipped with 4-cell battery.</p>	
Voltage	15.20 VDC	11.40 VDC
Weight (maximum)	0.25 kg (0.556 lb)	0.37 kg (0.82 lb)
Dimensions:		
Height	11.60 mm (0.46 in.)	11.60 mm (0.46 in.)
Width	222.20 mm (8.75 in.)	332.65 mm (13.10 in.)
Depth	74.20 mm (2.92 in.)	74.20 mm (2.92 in.)
Temperature range:		
Operating	0°C to 35°C (32°F to 95°F)	0°C to 35°C (32°F to 95°F)
Storage	-40°C to 65°C (-40°F to 149°F)	-40°C to 65°C (-40°F to 149°F)
Operating time	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.
Charging time (approximate)	4 hours (when the computer is off)	4 hours (when the computer is off)
	<p>NOTE: Control the charging time, duration, start and end time, and so on using the Dell Power Manager application. For more information on the Dell Power Manager see, <i>Me and My Dell</i> on https://www.dell.com/</p>	
Life span (approximate)	300 discharge/charge cycles	300 discharge/charge cycles
Coin-cell battery	CR-2032	CR-2032
Operating time	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.	Varies depending on operating conditions and can significantly reduce under certain power-intensive conditions.

Display

Table 18. Display specifications

Description	Values
Type	Full High Definition (FHD)
Panel technology	Wide Viewing Angle (WVA)
Luminance (typical)	<ul style="list-style-type: none">• 220 nits• 300 nits at 60 Hz (optional)• 300 nits at 144 Hz (optional)
Dimensions (active area):	
Height	193.59 mm (7.62 in.)
Width	344.16 mm (13.55 in.)
Diagonal	394.87 mm (15.55 in.)
Native resolution	1920 x 1080
Megapixels	2.07
Pixels Per Inch (PPI)	141
Contrast ratio (min)	600:1
Response time (max)	<ul style="list-style-type: none">• 220 nits at 60 Hz: 25 msec• 300 nits at 60 Hz (optional): 25 msec• 300 nits at 144 Hz (optional): 9 msec
Refresh rate	<ul style="list-style-type: none">• 60 Hz• 144 Hz (optional)
Horizontal view angle	+/- 85 degrees
Vertical view angle	+/- 85 degrees
Pixel pitch	0.179 mm
Power consumption (maximum)	<ul style="list-style-type: none">• 220 nits at 60 Hz: 4.2 W• 300 nits at 60 Hz (optional): 6.2 W• 300 nits at 144 Hz (optional): 7.8 W
Anti-glare vs glossy finish	Anti-glare
Touch options	Not supported

Fingerprint reader (optional)

Table 19. Fingerprint reader specifications

Description	Values
Sensor technology	Capacitive
Sensor resolution	500 dpi
Sensor area	5.50 mm x 4.50 mm (0.22 in. x 0.18 in.)
Sensor pixel size	108 x 88 pixels

Video

Table 20. Video specifications

Discrete graphics			
Controller	External display support	Memory size	Memory Type
NVIDIA GeForce RTX 2060	<ul style="list-style-type: none">HDMI 2.0b portmini DisplayPort 1.4	6 GB	GDDR6
NVIDIA GeForce RTX 2070	<ul style="list-style-type: none">HDMI 2.0b portmini DisplayPort 1.4	8 GB	GDDR6
NVIDIA GeForce RTX 2080	<ul style="list-style-type: none">HDMI 2.0b portmini DisplayPort 1.4	8 GB	GDDR6
NVIDIA GeForce GTX 1050 Ti	HDMI 2.0b port	4 GB	GDDR5

Table 21. Video specifications

Integrated graphics			
Controller	External display support	Memory size	Processor
Intel UHD Graphics 630	One DisplayPort and one HDMI port	Shared system memory	8 th Generation Intel Core i5/i7

Computer environment

Airborne contaminant level: G1 as defined by ISA-S71.04-1985

Table 22. Computer environment

	Operating	Storage
Temperature range	0°C to 35°C (32°F to 95°F)	-40°C to 65°C (-40°F to 149°F)
Relative humidity (maximum)	10% to 90% (non-condensing)	0% to 95% (non-condensing)
Vibration (maximum)*	0.66 GRMS	1.30 GRMS
Shock (maximum)	110 G†	160 G‡
Altitude (maximum)	-15.2 m to 3,048 m (-50 ft to 10,000 ft)	-15.2 m to 10,668 m (-50 ft to 35,000 ft)

* Measured using a random vibration spectrum that simulates user environment.

† Measured using a 2 ms half-sine pulse when the hard drive is in use.

‡ Measured using a 2 ms half-sine pulse when the hard-drive head is in parked position.

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