

[Mac](#)[iPad](#)[iPhone](#)[Watch](#)[TV](#)[Music](#)[Support](#)

# Compare iPhone models

[See all models >](#)Get help choosing. [Contact us.](#)

iPhone X

iPhone 11

iPhone 12



Silver



Purple



Blue

Available at authorized resellers

Starting at \$599
















[Buy](#)


Starting at \$799\*

[Buy](#)

## Quick Look

**5.8"**Super Retina HD display<sup>1</sup>**((4G))**4G LTE cellular<sup>2</sup>**6.1"**Liquid Retina HD display<sup>1</sup>**((4G))**4G LTE cellular<sup>2</sup>**6.1"**Super Retina XDR display<sup>1</sup>**((5G))**Superfast downloads,  
high-quality streaming<sup>2</sup>

iPhone X	iPhone 11	iPhone 12
		
— Wide Telephoto —	Ultra Wide Wide — —	Ultra Wide Wide — Dolby Vision HDR video recording up to 30 fps
<b>2x</b> Optical zoom range	<b>2x</b> Optical zoom range	<b>2x</b> Optical zoom range
—	—	—
 A11 Bionic chip	 A13 Bionic chip	 A14 Bionic chip Fastest chip in a smartphone
 Up to 13 hours video playback <sup>3</sup>	 Up to 17 hours video playback <sup>3</sup>	 Up to 17 hours video playback <sup>3</sup>
 Face ID	 Face ID	 Face ID
Glass front and back Surgical-grade stainless steel	Glass front and back Aerospace-grade aluminum	Ceramic Shield front 4x better drop performance <sup>4</sup> Aerospace-grade aluminum
 Water resistant to a depth of 1 meter for up to 30 minutes <sup>5</sup>	 Water resistant to a depth of 2 meters for up to 30 minutes <sup>5</sup>	 Water resistant to a depth of 6 meters for up to 30 minutes <sup>5</sup>

iPhone X	iPhone 11	iPhone 12
Water resistant to a depth of 1 meter for up to 30 minutes <sup>5</sup>	Water resistant to a depth of 2 meters for up to 30 minutes <sup>5</sup>	Water resistant to a depth of 6 meters for up to 30 minutes <sup>5</sup>
—	—	 <p>Compatible with MagSafe accessories and wireless chargers</p>

## Capacity<sup>6</sup>

64GB	64GB	64GB
256GB	128GB	128GB
	256GB	256GB

## Display

Super Retina HD display	Liquid Retina HD display	Super Retina XDR display
5.8-inch (diagonal) all-screen OLED display <sup>1</sup>	6.1-inch (diagonal) all-screen LCD display with IPS technology <sup>1</sup>	6.1-inch (diagonal) all-screen OLED display <sup>1</sup>
HDR display	—	HDR display
2436-by-1125-pixel resolution at 458 ppi	1792-by-828-pixel resolution at 326 ppi	2532-by-1170-pixel resolution at 460 ppi
1,000,000:1 contrast ratio (typical)	1400:1 contrast ratio (typical)	2,000,000:1 contrast ratio (typical)
True Tone display	True Tone display	True Tone display
Wide color display (P3)	Wide color display (P3)	Wide color display (P3)
3D Touch	Haptic Touch	Haptic Touch
625 nits max brightness (typical)	625 nits max brightness (typical)	625 nits max brightness (typical)
—	—	1200 nits max brightness (HDR)

## Size and Weight<sup>7</sup>

Height 5.65 inches (143.6 mm)	Height 5.94 inches (150.9 mm)	Height 5.78 inches (146.7 mm)
Width 2.79 inches (70.9 mm)	Width 2.98 inches (75.7 mm)	Width 2.82 inches (71.5 mm)
Depth —	Depth —	Depth —

iPhone X	iPhone 11	iPhone 12
<b>Width</b> 2.79 inches (70.9 mm)	<b>Width</b> 2.98 inches (75.7 mm)	<b>Width</b> 2.82 inches (71.5 mm)
<b>Depth</b> 0.30 inch (7.7 mm)	<b>Depth</b> 0.33 inch (8.3 mm)	<b>Depth</b> 0.29 inch (7.4 mm)
<b>Weight</b> 6.14 ounces (174 grams)	<b>Weight</b> 6.84 ounces (194 grams)	<b>Weight</b> 5.78 ounces (164 grams)

## Splash, Water, and Dust Resistant<sup>5</sup>

Rated IP67 (maximum depth of 1 meter up to 30 minutes) under IEC standard 60529

Rated IP68 (maximum depth of 2 meters up to 30 minutes) under IEC standard 60529

Rated IP68 (maximum depth of 6 meters up to 30 minutes) under IEC standard 60529

## Chip

A11 Bionic chip

Neural Engine

A13 Bionic chip

Third-generation Neural Engine

A14 Bionic chip

Next-generation Neural Engine

## Camera

Dual 12MP Wide and Telephoto cameras

Wide:  $f/1.8$  aperture  
Telephoto:  $f/2.4$  aperture

—

—

—

Dual optical image stabilization

2x optical zoom in  
Digital zoom up to 10x

True Tone flash with Slow Sync

—

Portrait mode

Portrait Lighting with five effects  
(Natural, Studio, Contour, Stage, Stage Mono)

Auto HDR for photos

Dual 12MP Ultra Wide and Wide cameras

Ultra Wide:  $f/2.4$  aperture  
Wide:  $f/1.8$  aperture

Night mode

Deep Fusion

—

Optical image stabilization

2x optical zoom out  
Digital zoom up to 5x

Brighter True Tone flash with Slow Sync

—

Portrait mode with advanced bokeh and Depth Control

Portrait Lighting with six effects  
(Natural, Studio, Contour, Stage, Stage Mono, High-Key Mono)

Next-generation Smart HDR for photos

Dual 12MP camera system (Ultra Wide and Wide)

Ultra Wide:  $f/2.4$  aperture  
Wide:  $f/1.6$  aperture

Night mode

Deep Fusion

—

Optical image stabilization

2x optical zoom out  
Digital zoom up to 5x

Brighter True Tone flash with Slow Sync

—

Portrait mode with advanced bokeh and Depth Control

Portrait Lighting with six effects  
(Natural, Studio, Contour, Stage, Stage Mono, High-Key Mono)

Smart HDR 3 for photos

- .. - - ..

iPhone X

iPhone 11

iPhone 12

## Video Recording

4K video recording at 24 fps, 25 fps, 30 fps, or 60 fps	4K video recording at 24 fps, 25 fps, 30 fps, or 60 fps	4K video recording at 24 fps, 25 fps, 30 fps, or 60 fps
1080p HD video recording at 25 fps, 30 fps, or 60 fps	1080p HD video recording at 25 fps, 30 fps, or 60 fps	1080p HD video recording at 25 fps, 30 fps, or 60 fps
—	—	HDR video recording with Dolby Vision up to 30 fps
—	Extended dynamic range for video up to 60 fps	Extended dynamic range for video up to 60 fps
Optical image stabilization for video	Optical image stabilization for video	Optical image stabilization for video
2x optical zoom in Digital zoom up to 6x	2x optical zoom out Digital zoom up to 3x	2x optical zoom out Digital zoom up to 3x
—	Audio zoom	Audio zoom
—	QuickTake video	QuickTake video
Slo-mo video support for 1080p at 120 fps or 240 fps	Slo-mo video support for 1080p at 120 fps or 240 fps	Slo-mo video support for 1080p at 120 fps or 240 fps
—	—	Night mode Time-lapse
Time-lapse video with stabilization	Time-lapse video with stabilization	Time-lapse video with stabilization
—	Stereo recording	Stereo recording

## Front Camera

TrueDepth camera	TrueDepth camera	TrueDepth camera
7MP photos	12MP photos	12MP photos
<i>f</i> /2.2 aperture	<i>f</i> /2.2 aperture	<i>f</i> /2.2 aperture
Retina Flash	Retina Flash	Retina Flash
Auto HDR for photos	Next-generation Smart HDR for photos	Smart HDR 3 for photos
Portrait mode	Portrait mode with advanced bokeh and Depth Control	Portrait mode with advanced bokeh and Depth Control
Portrait Lighting with five effects (Natural, Studio, Contour, Stage, Stage Mono)	Portrait Lighting with six effects (Natural, Studio, Contour, Stage, Stage Mono, High-Key Mono)	Portrait Lighting with six effects (Natural, Studio, Contour, Stage, Stage Mono, High-Key Mono)
—	Extended dynamic range for video at 30 fps	Extended dynamic range for video at 30 fps
—	Cinematic video stabilization (4K, 1080p, and 720p)	Cinematic video stabilization (4K, 1080p, and 720p)
—	4K video recording at 24 fps, 25 fps, 30 fps, or 60 fps	4K video recording at 24 fps, 25 fps, 30 fps, or 60 fps
—	—	HDR video recording with Dolby Vision up to 30 fps

iPhone X	iPhone 11	iPhone 12
—	4K video recording at 24 fps, 25 fps, 30 fps, or 60 fps	4K video recording at 24 fps, 25 fps, 30 fps, or 60 fps
—	—	HDR video recording with Dolby Vision up to 30 fps
1080p HD video recording at 25 fps or 30 fps	1080p HD video recording at 25 fps, 30 fps, or 60 fps	1080p HD video recording at 25 fps, 30 fps, or 60 fps
—	Slo-mo video support for 1080p at 120 fps	Slo-mo video support for 1080p at 120 fps
—	—	Night mode
—	—	Deep Fusion
—	QuickTake video	QuickTake video
Animoji and Memoji	Animoji and Memoji	Animoji and Memoji

## Carriers



## Cellular and Wireless

GSM/EDGE	GSM/EDGE	GSM/EDGE
UMTS/HSPA+	UMTS/HSPA+	UMTS/HSPA+
DC-HSDPA	DC-HSDPA	DC-HSDPA
CDMA EV-DO Rev. A (some models)	CDMA EV-DO Rev. A (some models)	CDMA EV-DO Rev. A (some models)
—	—	5G (sub-6 GHz and mmWave) <sup>2</sup>
LTE Advanced <sup>2</sup>	Gigabit-class LTE <sup>2</sup>	Gigabit LTE <sup>2</sup>
Wi-Fi 5 (802.11ac) with MIMO	Wi-Fi 6 (802.11ax) with MIMO	Wi-Fi 6 (802.11ax) with MIMO
Bluetooth 5.0	Bluetooth 5.0	Bluetooth 5.0
—	Ultra Wideband chip for spatial awareness <sup>8</sup>	Ultra Wideband chip for spatial awareness <sup>8</sup>
Built-in GPS/GNSS	Built-in GPS/GNSS	Built-in GPS, GLONASS, Galileo, QZSS, and BeiDou
VoLTE <sup>2</sup>	VoLTE <sup>2</sup>	VoLTE <sup>2</sup>
NFC with reader mode	NFC with reader mode	NFC with reader mode
Express Cards	Express Cards with power reserve	Express Cards with power reserve
Wi-Fi calling <sup>2</sup>	Wi-Fi calling <sup>2</sup>	Wi-Fi calling <sup>2</sup>

## Secure Authentication

iPhone X

iPhone 11

iPhone 12

## Secure Authentication

### Face ID

Enabled by TrueDepth camera for facial recognition

### Face ID

Enabled by TrueDepth camera for facial recognition

### Face ID

Enabled by TrueDepth camera for facial recognition

## Apple Pay

Pay with your iPhone using Face ID in stores, within apps, and on the web

Send and receive money in Messages

Pay for your ride using Express Transit

Pay with your iPhone using Face ID in stores, within apps, and on the web

Send and receive money in Messages

Pay for your ride using Express Transit

Pay with your iPhone using Face ID in stores, within apps, and on the web

Send and receive money in Messages

Pay for your ride using Express Transit

## Apple Card

Credit card created by Apple, designed for iPhone

Use the Wallet app to apply for, manage, and use Apple Card

Pay with Apple Pay using Face ID in stores, within apps, and on the web

Titanium, laser-etched physical credit card for use where Apple Pay is not accepted yet

[Learn more about Apple Card >](#)

Credit card created by Apple, designed for iPhone

Use the Wallet app to apply for, manage, and use Apple Card

Pay with Apple Pay using Face ID in stores, within apps, and on the web

Titanium, laser-etched physical credit card for use where Apple Pay is not accepted yet

[Learn more about Apple Card >](#)

Credit card created by Apple, designed for iPhone

Use the Wallet app to apply for, manage, and use Apple Card

Pay with Apple Pay using Face ID in stores, within apps, and on the web

Titanium, laser-etched physical credit card for use where Apple Pay is not accepted yet

[Learn more about Apple Card >](#)

## Video Calling<sup>9</sup>

### FaceTime video

Initiate video calls over cellular or Wi-Fi to any FaceTime-enabled device

FaceTime HD (1080p) over Wi-Fi

### FaceTime video

Initiate video calls over cellular or Wi-Fi to any FaceTime-enabled device

FaceTime HD (1080p) over Wi-Fi

### FaceTime video

Initiate video calls over cellular or Wi-Fi to any FaceTime-enabled device

FaceTime HD (1080p) over 5G or Wi-Fi

## Audio Calling<sup>9</sup>

### FaceTime audio

Initiate audio calls over cellular or Wi-Fi to any FaceTime audio-enabled device

iPhone X

▼

iPhone 11

▼

iPhone 12

▼

FaceTime audio

Initiate audio calls over cellular or Wi-Fi to any FaceTime audio-enabled device

Voice over LTE (VoLTE)<sup>2</sup>

Wi-Fi calling<sup>2</sup>

## Audio Playback

Stereo playback	Spatial audio playback	Spatial audio playback
—	Supports Dolby Atmos	Supports Dolby Atmos

## Video Playback

HDR with Dolby Vision, HDR10, and HLG	Supports Dolby Vision, HDR10, and HLG	HDR with Dolby Vision, HDR10, and HLG
---------------------------------------	---------------------------------------	---------------------------------------

## Siri<sup>10</sup>

Use your voice to send messages, set reminders, and more

Get intelligent suggestions on your Lock Screen and in Messages, Mail, QuickType, and more

Activate hands-free with only your voice using “Hey Siri”<sup>11</sup>

Use your voice to run shortcuts from your favorite apps

## Power and Battery<sup>3</sup>

Built-in rechargeable lithium-ion battery	Built-in rechargeable lithium-ion battery	Built-in rechargeable lithium-ion battery
Qi wireless charging <sup>12</sup>	Qi wireless charging <sup>12</sup>	MagSafe and Qi wireless charging <sup>12</sup>
Charging via USB to computer system or power adapter	Charging via USB to computer system or power adapter	Charging via USB to computer system or power adapter
<b>Video playback:</b> Up to 13 hours	<b>Video playback:</b> Up to 17 hours	<b>Video playback:</b> Up to 17 hours
—	<b>Video playback (streamed):</b> Up to 10 hours	<b>Video playback (streamed):</b> Up to 11 hours
<b>Audio playback:</b> Up to 60 hours	<b>Audio playback:</b> Up to 65 hours	<b>Audio playback:</b> Up to 65 hours
— . . . . .	— . . . . .	— . . . . .



iPhone X	iPhone 11	iPhone 12
<b>Audio playback:</b> Up to 60 hours	<b>Audio playback:</b> Up to 65 hours	<b>Audio playback:</b> Up to 65 hours
<b>Fast-charge capable</b> Up to 50% charge in 30 minutes <sup>13</sup> with 20W adapter or higher (sold separately)	<b>Fast-charge capable</b> Up to 50% charge in 30 minutes <sup>13</sup> with 20W adapter or higher (sold separately)	<b>Fast-charge capable</b> Up to 50% charge in 30 minutes <sup>13</sup> with 20W adapter or higher (sold separately)

## Included Headphones

EarPods with Lightning Connector	—	—
----------------------------------	---	---

## Sensors

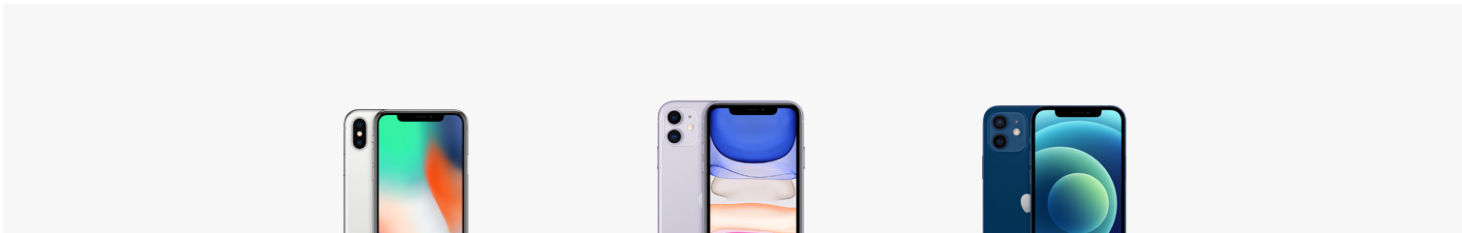
—	—	—
Three-axis gyro	Three-axis gyro	Three-axis gyro
Accelerometer	Accelerometer	Accelerometer
Proximity sensor	Proximity sensor	Proximity sensor
Ambient light sensor	Ambient light sensor	Ambient light sensor
Barometer	Barometer	Barometer

## SIM Card

Nano-SIM	Dual SIM (nano-SIM and eSIM) <sup>14</sup>	Dual SIM (nano-SIM and eSIM) <sup>14</sup>
Not compatible with existing micro-SIM cards	Not compatible with existing micro-SIM cards	Not compatible with existing micro-SIM cards

## Connector

Lightning
-----------





iPhone X



iPhone 11

[Tech specs >](#)



iPhone 12

[Tech specs >](#) [Learn more >](#)

\* Price includes a \$30 AT&T, T-Mobile, Sprint, or Verizon discount. Requires activation with carrier.

1. The display has rounded corners that follow a beautiful curved design, and these corners are within a standard rectangle. When measured as a standard rectangular shape, the screen is 5.42 inches (iPhone 12 mini), 5.85 inches (iPhone 11 Pro, iPhone Xs, iPhone X), 6.06 inches (iPhone 12 Pro, iPhone 12, iPhone 11, iPhone Xr), 6.46 inches (iPhone 11 Pro Max, iPhone Xs Max), or 6.68 inches (iPhone 12 Pro Max) diagonally. Actual viewable area is less.
2. Data plan required. 5G, Gigabit LTE, VoLTE, and Wi-Fi calling are available in select markets and through select carriers. Speeds are based on theoretical throughput and vary based on site conditions and carrier. For details on 5G and LTE support, contact your carrier and see [apple.com/iphone/cellular](#).
3. All battery claims depend on network configuration and many other factors; actual results will vary. Battery has limited recharge cycles and may eventually need to be replaced by Apple service provider. Battery life and charge cycles vary by use and settings. See [apple.com/batteries](#) and [apple.com/iphone/battery.html](#) for more information.
4. Claim based on iPhone 12 and iPhone 12 Pro Ceramic Shield front compared with previous-generation iPhone.
5. iPhone 7, iPhone 7 Plus, iPhone 8, iPhone 8 Plus, iPhone X, iPhone Xs, iPhone Xs Max, iPhone Xr, iPhone SE (2nd generation), iPhone 11 Pro, iPhone 11 Pro Max, iPhone 11, iPhone 12 Pro, iPhone 12 Pro Max, iPhone 12, and iPhone 12 mini are splash, water, and dust resistant and were tested under controlled laboratory conditions; iPhone 12 Pro, iPhone 12 Pro Max, iPhone 12, and iPhone 12 mini have a rating of IP68 under IEC standard 60529 (maximum depth of 6 meters up to 30 minutes); iPhone 11 Pro and iPhone 11 Pro Max have a rating of IP68 under IEC standard 60529 (maximum depth of 4 meters up to 30 minutes); iPhone Xs, iPhone Xs Max, and iPhone 11 have a rating of IP68 under IEC standard 60529 (maximum depth of 2 meters up to 30 minutes); and iPhone 7, iPhone 7 Plus, iPhone 8, iPhone 8 Plus, iPhone X, iPhone Xr, and iPhone SE (2nd generation) have a rating of IP67 under IEC standard 60529 (maximum depth of 1 meter up to 30 minutes). Splash, water, and dust resistance are not permanent conditions and resistance might decrease as a result of normal wear. Do not attempt to charge a wet iPhone; refer to the user guide for cleaning and drying instructions. Liquid damage not covered under warranty.
6. Available space is less and varies due to many factors. A standard configuration uses approximately 11GB to 14GB of space (including iOS and preinstalled apps) depending on the model and settings. Preinstalled apps use about 4GB, and you can delete these apps and restore them. Storage capacity subject to change based on software version and may vary by device.
7. Size and weight vary by configuration and manufacturing process.
8. Ultra Wideband availability varies by region.
9. FaceTime calling requires a FaceTime-enabled device for the caller and recipient and a Wi-Fi connection. Availability over a cellular network depends on carrier policies; data charges may apply.
10. Siri may not be available in all languages or in all areas, and features may vary by area. Internet access required. Cellular data charges may apply.
11. "Hey Siri" on iPhone 6 and iPhone 6 Plus requires connection to power.
12. Wireless chargers sold separately.
13. Testing conducted by Apple in August 2017 using preproduction iPhone X, iPhone 8, and iPhone 8 Plus units and software, and in August 2018 using preproduction iPhone Xs, iPhone Xs Max, and iPhone Xr units and software, with accessory Apple USB-C Power Adapters (18W Model A1720, 29W Model A1540, 30W Model A1882, 61W Model A1718, 87W Model A1719). Testing conducted by Apple in August 2019 using preproduction iPhone 11, iPhone 11 Pro, and iPhone 11 Pro Max units and software and accessory Apple USB-C Power Adapters (18W Model A1720, 29W Model A1540, 30W Model A1882, 61W Model A1947, and 87W Model A1719). Testing conducted by Apple in February 2020 using preproduction iPhone SE (2nd generation) units and software and accessory Apple USB-C Power Adapters (18W Model A1720 and 30W Model A1882). Testing conducted by Apple in September 2020 using preproduction iPhone 12 mini, iPhone 12, iPhone 12 Pro, and iPhone 12 Pro Max units and software and accessory Apple USB-C Power Adapter (20W Model A2305). Fast-charge testing conducted with drained iPhone units. Charge time varies with settings and environmental factors; actual results will vary.
14. Use of eSIM requires a wireless service plan (which may include restrictions on switching service providers and roaming, even after contract expiration). Not all carriers support eSIM. Use of eSIM in iPhone may be disabled when purchased from some carriers. See your carrier for details. To learn more, visit [support.apple.com/kb/HT209044](#).

[Apple](#) > [iPhone](#) > [Compare](#)

#### Shop and Learn

Mac  
iPad  
iPhone  
Watch  
TV  
Music  
AirPods  
HomePod  
iPod touch  
Accessories  
Gift Cards

#### Services

Apple Music  
Apple TV+  
Apple Fitness+  
Apple News+  
Apple Arcade  
iCloud  
Apple One  
Apple Card  
Apple Books  
App Store  
Account  
Manage Your Apple ID  
Apple Store Account  
iCloud.com

#### Apple Store

Find a Store  
Shop Online  
Genius Bar  
Today at Apple  
Apple Camp  
Apple Store App  
Refurbished and Clearance  
Financing  
Apple Trade In  
Order Status  
Shopping Help

#### For Business

Apple and Business  
Shop for Business  
  
**For Education**  
Apple and Education  
Shop for K-12  
Shop for College  
  
**For Healthcare**  
Apple in Healthcare  
Health on Apple Watch  
Health Records on iPhone  
  
**For Government**  
Shop for Government  
Shop for Veterans and Military

#### Apple Values

Accessibility  
Education  
Environment  
Inclusion and Diversity  
Privacy  
Racial Equity and Justice  
Supplier Responsibility  
  
**About Apple**  
Newsroom  
Apple Leadership  
Job Opportunities  
Investors  
Events  
Contact Apple

More ways to shop: [Find an Apple Store](#) or [other retailer](#) near you. Or call 1-800-MY-APPLE.

Copyright © 2021 Apple Inc. All rights reserved. [Privacy Policy](#) | [Terms of Use](#) | [Sales and Refunds](#) | [Legal](#) | [Site Map](#)

United States

[Compare Foldable Phones](#) >

# Compare

Galaxy S20



Galaxy S10



Galaxy S9

Cosmic Gray<sup>1</sup>Prism White<sup>1</sup>Lilac Purple<sup>1</sup>

## Display<sup>2</sup>

6.2" Quad HD+ Dynamic AMOLED 2X  
(3200x1440)

563 ppi

Infinity-O Display

6.1" Quad HD+ Dynamic AMOLED (3040  
x 1440)

550 ppi

Infinity-O Display

5.8" Quad HD+ Super AMOLED  
(2960x1440)

570 ppi

Infinity Display

## Dimension

151.7 x 69.1 x 7.9 mm

149.9 x 70.4 x 7.8 mm

147.7 x 68.7 x 8.5 mm





## Galaxy S20



## Galaxy S10



## Galaxy S9



### Weight

163g

157g

163g

### S pen Support<sup>3</sup>

-

-

-

### Battery Capacity<sup>4</sup>

4000mAh (typical)

3400mAh (typical)

3000 mAh

### Charging<sup>5</sup>

Super Fast Charging

-

-

Fast Wireless Charging 2.0

Fast Wireless Charging 2.0

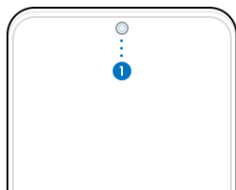
-

Wireless PowerShare

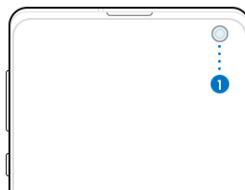
Wireless PowerShare

-

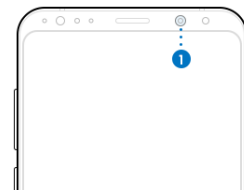
### Front Camera



1 Dual Pixel 10MP AF, Aperture: F2.2



1 Dual Pixel 10MP AF, Aperture: F1.9



1 8MP AF, Aperture: F1.7

### Rear Camera





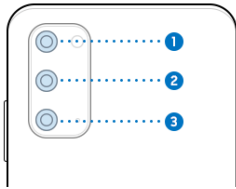
## Galaxy S20



## Galaxy S10

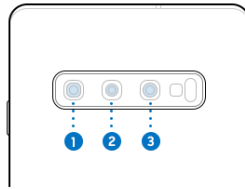


## Galaxy S9



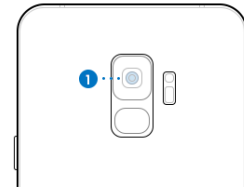
### Triple Camera with Dual OIS

- 1 Ultra Wide Camera (12MP, Aperture: F2.2)
- 2 Wide-angle Camera (Super Speed Dual Pixel 12MP AF, Aperture: F1.8)
- 3 Telephoto Camera (PDAF 64MP, Aperture: F2.0)



### Triple Camera with Dual OIS

- 1 Telephoto Camera (PDAF 12MP, Aperture: F2.4)
- 2 Wide-angle Camera (Super Speed Dual Pixel 12MP AF, Dual Aperture: F1.5 mode/ F2.4 mode)
- 3 Ultra Wide Camera (16MP, Aperture: F2.2)



- 1 Super Speed Dual Pixel 12MP AF, Dual Aperture: F1.5 mode/ F2.4 mode

## Camera Features<sup>6</sup>

### Space Zoom

Up to 30x Super Resolution Zoom  
3x Hybrid Optic Zoom

### Zoom

Up to 10x Digital Zoom  
0.5x out and 2x in Optic Zoom

### Zoom

Up to 10x Digital Zoom

Single Take

Night Mode

Live focus

Single Take

Night Mode

Live focus

-

-

-

## Video Recording<sup>7</sup>

8K at 24 fps

4K UHD at 60 fps

1080p FHD at 60 fps

720p HD at 30 fps

-

4K UHD at 60 fps

1080p FHD at 60 fps

720p HD at 30 fps

-

4K at 30 fps or 60fps

1080p FHD at 30 fps or 60 fps

720p HD at 30 fps

HDR 10+

Live focus video

Super steady

HDR 10+

Live focus video

Super steady

-

-

-





Galaxy S20	Galaxy S10	Galaxy S9
Super steady	Super steady	-
Zoom-In Mic	-	-
Super Slow-Mo	Super Slow-Mo	Super Slow-Mo
Slow motion	Slow motion	Slow motion
HEVC (High Efficiency Video coding)	HEVC (High Efficiency Video coding)	HEVC (High Efficiency Video coding)
-	-	-

## Intelligent Features<sup>8</sup>

Scene Optimizer	Scene Optimizer	Scene Optimizer
Shot suggestion	Shot suggestion	-
Flaw Detection	Flaw Detection	Flaw Detection
AR Doodle	AR Doodle	-

## Memory<sup>9</sup>

128GB internal storage with 8GB RAM	128GB internal storage with 8GB RAM 512GB internal storage with 8GB RAM	64GB internal storage with 4GB RAM
-------------------------------------	--	------------------------------------

## Expandable memory<sup>10</sup>

Add extra storage via microSD card	Add extra storage via microSD card	Add extra storage via microSD card
------------------------------------	------------------------------------	------------------------------------

## AP<sup>11</sup>

7nm 64-bit Octa-Core Processor * 2.7GHz (Maximum Clock Speed) + 2.56GHz + 2GHz	8nm 64-bit Octa-Core Processor ※ 2.73GHz (Maximum Clock Speed) + 2.31GHz + 1.95GHz	10nm 64-bit Octa-Core Processor * 2.8GHz + 1.7GHz (Maximum Clock Speed, Performance Core + Efficiency Core)
7nm 64-bit Octa-Core Processor * 2.8GHz (Maximum Clock Speed) + 2.46GHz + 1.8GHz	7nm 64-bit Octa-Core Processor ※ 2.84GHz (Maximum Clock Speed) + 2.41GHz + 1.78GHz	





## Galaxy S20



## Galaxy S10



## Galaxy S9



### Network<sup>12</sup>

LTE

Wi-Fi 6

-

LTE

Wi-Fi 6

-

LTE

Wi-Fi 5

-

### Security & Authentication

Secured by Knox

On-screen fingerprint sensor

-

Secured by Knox

On-screen fingerprint sensor

-

Secured by Knox

Fingerprint sensor on the back

Iris sensor

### Water & Dust Resistance<sup>13</sup>

IP68

\*Based on test conditions of submersion in up to 1.5 meters of fresh water for up to 30 minutes.

IP68

\*Based on test conditions of submersion in up to 1.5 meters of fresh water for up to 30 minutes.

IP68

\*Based on test conditions of submersion in up to 1.5 meters of fresh water for up to 30 minutes.

1. Color availability may vary depending on country or carrier.
2. Screen measured diagonally as a full rectangle without accounting for the rounded corners. Measured diagonally, Galaxy S20's screen size is 6.2" in the full rectangle and 6.1" with accounting for the rounded corners; Galaxy S20+'s screen size is 6.7" in the full rectangle and 6.5" with accounting for the rounded corners; and Galaxy S20 Ultra's screen size is 6.9" in the full rectangle and 6.7" with accounting for the rounded corners. Measured diagonally, Galaxy Note10's screen size is 6.3" as a full rectangle and 6.2" when accounting for the rounded corners; and Galaxy Note10+'s screen size is 6.8" as a full rectangle and 6.7" when accounting for the rounded corners. Measured diagonally, Galaxy S10e's screen size is 5.8" in the full rectangle and 5.6" with accounting for the rounded corners; Galaxy S10's screen size is 6.1" in the full rectangle and 6.0" with accounting for the rounded corners; Galaxy S10+'s screen size is 6.4" in the full rectangle and 6.3" with accounting for the rounded corners; and Galaxy S10 5G's screen size is 6.7" in the full rectangle and 6.6" with accounting for the rounded corners. Actual viewable area is less due to the rounded corners and camera hole. Default resolution of Galaxy Note10+, S10 5G, S10, S10+, Note9, S9, S9+, Note8, S8 and S8+ is Full HD+, which can be changed to Quad HD+ in Settings. Infinity Display: a near bezel-less, full-frontal, edge-to-edge screen.
3. S Pen remote may function within 10 meters of device, subject to surroundings. Air actions support may vary by app.
4. Typical value tested under third-party laboratory condition. Typical value is the estimated average value considering the deviation in battery capacity among the battery samples tested under IEC 61960 standard. Rated (minimum) capacity is 3880mAh for Galaxy S20, 4370mAh for Galaxy S20+, and 4855mAh for Galaxy S20 Ultra, 3400mAh for Galaxy Note10, 4170mAh for Galaxy Note10+, 3000mAh for Galaxy S10e, 3300mAh for Galaxy S10, 4000mAh for Galaxy S10+, and 4400mAh for Galaxy S10 5G. Actual battery life may vary depending on network environment, usage patterns, and other factors.
5. Super Fast Charging available when charging via included power adapter and cable. Fast Wireless Charging 2.0 currently available with Wireless Charger Stand, Wireless Charger Duo Pad, and other devices that support 10W or more wireless charging. Sold separately. Actual charging speed may vary depending on the actual usage, charging conditions, and other factors. Wireless charger requires power connection. Recommend using in-box charging cable and/or travel adapter, as use of third party items may cause damage to the Wireless Charger Stand and Wireless Charger Duo Pad or a decrease in charging speed. Limited to Samsung or other brand smartphones with WPC Qi wireless charging, such as Galaxy S20, S20+, S20 Ultra, Z Flip, Note10, Note10+, S10e, S10, S10+, Fold, S9, S9+, S8, S8+, S8 Active, S7, S7 edge, S7 Active, S6, S6 edge, S6 Active, S6 edge+, Note9, Note8, Note FE, Note5, and wearables such as Galaxy Watch Active2, Galaxy Watch Active, Gear Sport, Gear S3, Galaxy Watch, and Galaxy Buds. If battery power is lower than 30% Wireless PowerShare may not function. May not work with certain accessories, covers, other brand devices, or some Samsung wearables. May affect call reception or data services, depending on your network environment.
6. Super Resolution Zoom includes digital zoom, which may cause some image deterioration. Hybrid Optic Zoom combines high-resolution image sensor and lens. The format and amount of Single Take results may differ based on original capture. The availability of Single Take for Galaxy Note10, Note10+, S10e, S10, S10+ and S10 5G may vary depending on the device's software update. Update schedule may differ by country and carrier. The availability of Live focus for Galaxy Note9, S9+ and Note8 may vary depending on the device's software update. Update schedule may differ by country and carrier.
7. The availability of Live focus video for Galaxy S10e, S10, S10+ and S10 5G may vary depending on the device's software update. Update schedule may differ by country and carrier.
8. Scene Optimizer supports 30 modes: Face, Baby, Person, Dog, Cat, Food, People, Beaches, Sky, Mountain, Sunset, Sunrise, City, Snow, Waterfall, Watersides, Scenery, Stage, Vehicles, Drinks, Flowers, Trees, Greenery, Animal, Shoes, Backlit, Indoor, Text, Clothes, Night view Accuracy of Scene Optimizer and Flaw Detection may differ depending on shooting conditions including multiple subjects, being out of focus, or moving subjects. Blink and blur detection works best when there are three or fewer people in the frame, 1.5 meters or closer to the camera. Lens smudge and backlighting detection notifies once every 24 hours if flaw is detected. Backlight detection works when HDR is turned off. Super Slow-mo only supports HD resolution. On Galaxy S20 and S20+, users can record approximately 1 second of video captured at up to 960 fps with approximately 32 seconds of playback. On Galaxy S20 Ultra, users can record approximately 1 second of video captured at 480 fps and digitally enhance the video to 60fps with approximately 37 seconds of playback. Playback time can be edited in Cinema Slow-mo player. The availability of Scene Optimizer and Flaw Detection for Galaxy S20 and S20+ may vary depending on the device's software update.





## Galaxy S20



## Galaxy S10



## Galaxy S9



### Security & Authentication

Secured by Knox

On-screen fingerprint sensor

-

Secured by Knox

On-screen fingerprint sensor

-

Secured by Knox

Fingerprint sensor on the back

Iris sensor

### Water & Dust Resistance<sup>13</sup>

IP68

\*Based on test conditions of submersion in up to 1.5 meters of fresh water for up to 30 minutes.

IP68

\*Based on test conditions of submersion in up to 1.5 meters of fresh water for up to 30 minutes.

IP68

\*Based on test conditions of submersion in up to 1.5 meters of fresh water for up to 30 minutes.

- Color availability may vary depending on country or carrier.
- Screen measured diagonally as a full rectangle without accounting for the rounded corners. Measured diagonally, Galaxy S20's screen size is 6.2" in the full rectangle and 6.1" with accounting for the rounded corners; Galaxy S20+'s screen size is 6.7" in the full rectangle and 6.5" with accounting for the rounded corners; and Galaxy S20 Ultra's screen size is 6.9" in the full rectangle and 6.7" with accounting for the rounded corners. Measured diagonally, Galaxy Note10's screen size is 6.3" as a full rectangle and 6.2" when accounting for the rounded corners; and Galaxy Note10+'s screen size is 6.8" as a full rectangle and 6.7" when accounting for the rounded corners. Measured diagonally, Galaxy S10e's screen size is 5.8" in the full rectangle and 5.6" with accounting for the rounded corners; Galaxy S10's screen size is 6.1" in the full rectangle and 6.0" with accounting for the rounded corners; Galaxy S10+'s screen size is 6.4" in the full rectangle and 6.3" with accounting for the rounded corners; and Galaxy S10 5G's screen size is 6.7" in the full rectangle and 6.6" with accounting for the rounded corners. Actual viewable area is less due to the rounded corners and camera hole. Default resolution of Galaxy Note10+, S10 5G, S10, S10+, Note9, S9, S9+, Note8, S8 and S8+ is Full HD+, which can be changed to Quad HD+ in Settings. Infinity Display: a near bezel-less, full-frontal, edge-to-edge screen.
- S Pen remote may function within 10 meters of device, subject to surroundings. Air actions support may vary by app.
- Typical value tested under third-party laboratory condition. Typical value is the estimated average value considering the deviation in battery capacity among the battery samples tested under IEC 61960 standard. Rated (minimum) capacity is 3880mAh for Galaxy S20, 4370mAh for Galaxy S20+, and 4855mAh for Galaxy S20 Ultra, 3400mAh for Galaxy Note10, 4170mAh for Galaxy Note10+, 3000mAh for Galaxy S10e, 3300mAh for Galaxy S10, 4000mAh for Galaxy S10+, and 4400mAh for Galaxy S10 5G. Actual battery life may vary depending on network environment, usage patterns, and other factors.
- Super Fast Charging available when charging via included power adapter and cable. Fast Wireless Charging 2.0 currently available with Wireless Charger Stand, Wireless Charger Duo Pad, and other devices that support 10W or more wireless charging. Sold separately. Actual charging speed may vary depending on the actual usage, charging conditions, and other factors. Wireless charger requires power connection. Recommend using in-box charging cable and/or travel adapter, as use of third party items may cause damage to the Wireless Charger Stand and Wireless Charger Duo Pad or a decrease in charging speed. Limited to Samsung or other brand smartphones with WPC Qi wireless charging, such as Galaxy S20, S20+, S20 Ultra, Z Flip, Note10, Note10+, S10e, S10, S10+, Fold, S9, S9+, S8, S8+, S8 Active, S7, S7 edge, S7 Active, S6, S6 edge, S6 Active, S6 edge+, Note9, Note8, Note FE, Note5, and wearables such as Galaxy Watch Active2, Galaxy Watch Active, Gear Sport, Gear S3, Galaxy Watch, and Galaxy Buds. If battery power is lower than 30% Wireless PowerShare may not function. May not work with certain accessories, covers, other brand devices, or some Samsung wearables. May affect call reception or data services, depending on your network environment.
- Super Resolution Zoom includes digital zoom, which may cause some image deterioration. Hybrid Optic Zoom combines high-resolution image sensor and lens. The format and amount of Single Take results may differ based on original capture. The availability of Single Take for Galaxy Note10, Note10+, S10e, S10, S10+ and S10 5G may vary depending on the device's software update. Update schedule may differ by country and carrier. The availability of Night mode for Galaxy S10e, S10, S10+ and S10 5G may vary depending on the device's software update. Update schedule may differ by country and carrier. The availability of Live focus for Galaxy Note9, S9+ and Note8 may vary depending on the device's software update. Update schedule may differ by country and carrier.
- The availability of Live focus video for Galaxy S10e, S10, S10+ and S10 5G may vary depending on the device's software update. Update schedule may differ by country and carrier.
- Scene Optimizer supports 30 modes: Face, Baby, Person, Dog, Cat, Food, People, Beaches, Sky, Mountain, Sunset, Sunrise, City, Snow, Waterfall, Watersides, Scenery, Stage, Vehicles, Drinks, Flowers, Trees, Greenery, Animal, Shoes, Backlit, Indoor, Text, Clothes, Night view Accuracy of Scene Optimizer and Flaw Detection may differ depending on shooting conditions including multiple subjects, being out of focus, or moving subjects. Blink and blur detection works best when there are three or fewer people in the frame, 1.5 meters or closer to the camera. Lens smudge and backlighting detection notifies once every 24 hours if flaw is detected. Backlight detection works when HDR is turned off. Super Slow-mo only supports HD resolution. On Galaxy S20 and S20+, users can record approximately 1 second of video captured at up to 960 fps with approximately 32 seconds of playback. On Galaxy S20 Ultra, users can record approximately 1 second of video captured at 480 fps and digitally enhance the video to 960 fps with approximately 32 seconds of playback. Playback time can be edited in Super Slow-mo player. The availability of Scene optimizer and Flaw detection for Galaxy S9 and S9+ may vary depending on the device's software update. Update schedule may differ by country and carrier. The availability of AR Doodle for Galaxy S10e, S10, S10+ and S10 5G may vary depending on the device's software update. Update schedule may differ by country and carrier.
- Actual storage available may vary depending on pre-installed software. RAM capacity may vary depending on model, color, and country.
- MicroSD card sold separately. Availability may vary depending on country and manufacturer.
- May differ by country and carrier.
- Requires optimal 5G connection. 5G services are only supported in 5G network enabled locations in 5G-ready countries. Actual speed may vary depending on country, carrier, and user environment. Availability of Wi-Fi 6 support may vary depending on country or region.
- Based on test conditions for submersion in up to 1.5 meters of freshwater for up to 30 minutes. Not advised for beach or pool use.

Share



MY NETWORK SPEED (HIGH) ▾

SITE MAP >

GLOBAL SAMSUNG >

**SAMSUNG** ALL CONTENTS COPYRIGHT © SAMSUNG ELECTRONICS CO., LTD.  
SAMSUNG.COM | SAMSUNGMOBILEPRESS.COM | SAMSUNG NEWSROOM | SAMSUNG DEVELOPERS | DESIGN SAMSUNG

More Back to Top