iPad Pro 11-inch (4th generation) - Technical Specifications

Year introduced: 2022



Finish

- Silver
- Space Gray

Capacity¹

- 128GB
- 256GB
- 512GB
- 1TB
- 2TB

Size and Weight²

· Wi-Fi models

Width: 7.02 inches (178.5 mm)

Height: 9.74 inches (247.6 mm)

Depth: 0.23 inch (5.9 mm)

Weight: 1.03 pounds (466 grams)

• Wi-Fi + Cellular models

Width: 7.02 inches (178.5 mm)

Height: 9.74 inches (247.6 mm)

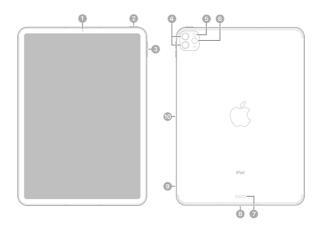
Depth: 0.23 inch (5.9 mm)

Weight: 1.04 pounds (470 grams)

Buttons and Connectors

- 1. Front camera
- 2. Top button
- 3. Volume buttons

- 4. Rear cameras
- 5. Flash
- 6. LiDAR Scanner
- 7. Smart Connector
- 8. Thunderbolt / USB 4 connector
- 9. SIM tray (Wi-Fi + Cellular)
- 10. Magnetic connector for Apple Pencil



In the Box

- iPad Pro 11-inch (4th generation)
- USB-C Charge Cable (1 meter)
- 20W USB-C Power Adapter

Display

Liquid Retina display

- 11-inch (diagonal) LED backlit Multi-Touch display with IPS technology
- 2388-by-1668-pixel resolution at 264 pixels per inch (ppi)
- ProMotion technology
- Wide color display (P3)
- True Tone display
- · Fingerprint-resistant oleophobic coating
- Fully laminated display
- · Antireflective coating
- 1.8% reflectivity
- SDR brightness: 600 nits max
- Supports Apple Pencil (2nd generation)
- · Apple Pencil hover

The 11-inch iPad Pro 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 11 inches diagonally (actual viewable area is less).

Chip

Apple M2 chip

- 8-core CPU with 4 performance cores and 4 efficiency cores
- 10-core GPU
- 16-core Neural Engine
- 100GB/s memory bandwidth
- 8GB RAM on models with 128GB, 256GB, or 512GB storage
- 16GB RAM on models with 1TB or 2TB storage

Media engine

- Hardware-accelerated H.264, HEVC, ProRes, and ProRes RAW
- · Video decode engine
- · Video encode engine
- ProRes encode and decode engine

Camera

- Pro camera system: Wide and Ultra Wide cameras
- Wide: 12MP, f/1.8 aperture
- Ultra Wide: 10MP, f/2.4 aperture, and 125° field of view
- 2x optical zoom out
- Digital zoom up to 5x
- Five-element lens (Wide and Ultra Wide)
- Brighter True Tone flash
- Panorama (up to 63MP)
- Sapphire crystal lens cover
- Autofocus with Focus Pixels (Wide)
- Smart HDR 4
- Wide color capture for photos and Live Photos
- Lens correction (Ultra Wide)
- Advanced red-eye correction
- Photo geotagging
- Auto image stabilization
- Burst mode
- Image formats captured: HEIF and JPEG

Video Recording

- 4K video recording at 24 fps, 25 fps, 30 fps, or 60 fps (Wide)
- 1080p HD video recording at 25 fps, 30 fps, or 60 fps
- 720p HD video recording at 30 fps
- ProRes video recording up to 4K at 30 fps (1080p at 30 fps for 128GB storage)
- 2x optical zoom out
- Audio zoom
- · Brighter True Tone flash

- Slo-mo video support for 1080p at 120 fps or 240 fps
- Time-lapse video with stabilization
- Extended dynamic range for video up to 30 fps
- Cinematic video stabilization (4K, 1080p, and 720p)
- Continuous autofocus video
- Playback zoom
- Video formats recorded: HEVC and H.264
- Stereo recording

TrueDepth Camera

- 12MP Ultra Wide camera, 122° field of view
- f/2.4 aperture
- Portrait mode with advanced bokeh and Depth Control
- Portrait Lighting with six effects (Natural, Studio, Contour, Stage, Stage Mono, High-Key Mono)
- Animoji and Memoji
- Smart HDR 4
- 1080p HD video recording at 25 fps, 30 fps, or 60 fps
- Time-lapse video with stabilization
- Extended dynamic range for video up to 30 fps
- Cinematic video stabilization (1080p and 720p)
- · Wide color capture for photos and Live Photos
- Lens correction
- Retina Flash
- Auto image stabilization
- Burst mode

Video Calling³

- FaceTime video
- Center Stage
- iPad to any FaceTime-enabled device over Wi-Fi or cellular

Audio Calling³

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

Speakers

Four speaker audio

Microphones

Five studio-quality microphones for calls, video recording, and audio recording

Cellular and Wireless

All models

Wi-Fi 6E (802.11ax) with 2x2 MIMO; speeds up to 2.4 Gbps⁴ Simultaneous dual band Bluetooth 5.3

• Wi-Fi + Cellular models

5G (sub-6 GHz and mmWave) with 4x4 MIMO Gigabit LTE with 4x4 MIMO and LAA

Model A2435 and A2764:

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5G NR (Bands n1, n2, n3, n5, n7, n8, n12, n14, n20, n25, n26, n28, n29, n30, n38, n40, n41, n48, n66, n70, n71, n77, n78, n79)<sup>5</sup>
5G NR mmWave (Bands n258, n260, n261)
FDD-LTE (Bands 1, 2, 3, 4, 5, 7, 8, 11, 12, 13, 14, 17, 18, 19, 20, 21, 25, 26, 28, 29, 30, 32, 66, 71)
TD-LTE (Bands 34, 38, 39, 40, 41, 42, 46, 48)
UMTS/HSPA/HSPA+/DC-HSDPA (850, 900, 1700/2100, 1900, 2100 MHz)
Data only<sup>6</sup>
Wi-Fi calling<sup>5</sup>
eSIM<sup>7</sup>
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Learn more about cellular

For details on 5G and LTE support, contact your carrier and see <u>apple.com/ipad/cellular/networks</u>.

SIM Card

- Nano-SIM
- eSIM⁷

Location

All models

Digital compass

Wi-Fi

iBeacon microlocation

• Wi-Fi + Cellular models

GPS/GNSS

Cellular

Sensors

- Face ID
- LiDAR Scanner
- · Three-axis gyro
- Accelerometer

- Barometer
- Ambient light sensor

Face ID

- Enabled by TrueDepth camera for facial recognition
- Unlock iPad
- Secure personal data within apps
- Make purchases from the iTunes Store, App Store, and Apple Books

Apple Pay

- · Pay with your iPad using Face ID within apps and on the web
- Send and receive money in Messages

Siri⁸

- Use your voice to send messages, set reminders, and more
- · Get proactive suggestions
- · Use hands-free
- · Listen and identify songs

Charging and Expansion

Thunderbolt / USB 4 port with support for:

Charging

DisplayPort

Thunderbolt 3 (up to 40Gb/s)

USB 4 (up to 40Gb/s)

USB 3.1 Gen 2 (up to 10Gb/s)

Display Support

- Supports full native resolution on the built-in display at millions of colors Supports one external display with up to 6K resolution at 60Hz
- Thunderbolt 3 digital video output

Native DisplayPort output over USB-C

VGA, HDMI, DVI, and Thunderbolt 2 output supported using adapters (sold separately)⁹

Video mirroring

Up to 4K AirPlay for mirroring, photos, and video out to Apple TV (2nd generation or later) or AirPlay-enabled smart TV

Video mirroring and video out support through USB-C Digital AV Multiport Adapter and USB-C VGA Multiport Adapter (adapters sold separately)⁹

Power and Battery¹⁰

Built-in 28.65-watt-hour rechargeable lithium-polymer battery

- Up to 10 hours of surfing the web on Wi-Fi or watching video
- Charging via power adapter or USB-C to computer system
- Wi-Fi + Cellular models

Up to 9 hours of surfing the web using cellular data network

Operating System

iPadOS

iPadOS comes with powerful features and built-in apps designed to take advantage of the unique capabilities of iPad.

Learn more about iPadOS

iPad User Guide

Accessibility

Built-in accessibility features supporting vision, mobility, hearing, and cognitive disabilities help you get the most out of your iPad.

Features include:

- VoiceOver
- Zoom
- Magnifier
- Spoken Content
- Voice Control
- Switch Control
- AssistiveTouch
- · Siri and Dictation
- Type to Siri
- Real-Time Text
- Audio Descriptions
- · Subtitles and Closed Captioning
- Live Captions (beta)

Built-in Apps

- App Store
- Books
- Calendar
- Camera
- Clock
- Contacts
- FaceTime
- Files
- Find My
- Freeform
- Home

- iTunes Store
- Magnifier
- Mail
- Maps
- Measure
- Messages
- Music
- News
- Notes
- Photo Booth
- Photos
- Podcasts
- Reminders
- Safari
- Settings
- Shortcuts
- Siri
- Stocks
- Tips
- Translate
- TV
- Voice Memos
- Weather

Free Apps from Apple

Pages, Numbers, Keynote, iMovie, GarageBand, Clips, and Apple Store app are preinstalled on iPad.

- Pages
- Numbers
- Keynote
- iMovie
- GarageBand
- Apple Store
- Trailers
- Clips
- Swift Playgrounds
- Support

System Requirements

- Apple ID (required for some features)
- Internet access¹¹

• Syncing to a Mac or PC requires:

macOS Catalina 10.15 or later using the Finder macOS El Capitan 10.11.6 through macOS Mojave 10.14.6 using iTunes 12.8 or later

Windows 10 and iTunes 12.12 or later (free download from itunes.com/download)

Languages

Language support

English (Australia, UK, U.S.), Chinese (Simplified, Traditional, Traditional – Hong Kong), French (Canada, France), German, Italian, Japanese, Korean, Spanish (Latin America, Spain), Arabic, Bulgarian, Catalan, Croatian, Czech, Danish, Dutch, Finnish, Greek, Hebrew, Hindi, Hungarian, Indonesian, Kazakh, Malay, Norwegian, Polish, Portuguese (Brazil, Portugal), Romanian, Russian, Slovak, Swedish, Thai, Turkish, Ukrainian, Vietnamese

QuickType keyboard support

English (Australia, Canada, India, Japan, New Zealand, Singapore, South Africa, UK, U.S.), Chinese – Simplified (Handwriting, Pinyin QWERTY, Pinyin 10-Key, Shuangpin, Stroke), Chinese – Traditional (Cangije, Handwriting, Pinyin QWERTY, Pinyin 10-Key, Shuangpin, Stroke, Sucheng, Zhuyin), French (Belgium, Canada, France, Switzerland), German (Austria, Germany, Switzerland), Italian, Japanese (Kana, Romaji), Korean (2-Set, 10-Key), Spanish (Latin America, Mexico, Spain), Ainu, Albanian, Amharic, Apache (Western), Arabic, Arabic (Najdi), Armenian, Assamese, Assyrian, Azerbaijani, Bangla, Belarusian, Bodo, Bulgarian, Burmese, Cantonese – Traditional (Cangije, Handwriting, Phonetic, Stroke, Sucheng), Catalan, Cherokee, Croatian, Czech, Danish, Dhivehi, Dogri, Dutch, Dzongkha, Emoji, Estonian, Faroese, Filipino, Finnish, Flemish, Fula (Adlam), Georgian, Greek, Gujarati, Hawaijan, Hebrew, Hindi (Devanagari, Latin, Transliteration). Hungarian, Icelandic, Igbo, Indonesian, Irish Gaelic, Kannada, Kashmiri (Arabic, Devanagari), Kazakh, Khmer, Konkani (Devanagari), Kurdish (Arabic, Latin), Kyrgyz, Lao, Latvian, Lithuanian, Macedonian, Maithili, Malay (Arabic, Latin). Malayalam, Maltese, Manipuri (Bengali, Meetei Mayek), Māori, Marathi, Mongolian, Navajo, Nepali, Norwegian (Bokmål, Nynorsk), Odia, Pashto, Persian, Persian (Afghanistan), Polish, Portuguese (Brazil, Portugal), Punjabi, Rohingya, Romanian, Russian, Samoan, Sanskrit, Santali (Devanagari, Ol Chiki), Serbian (Cyrillic, Latin), Sindhi (Arabic, Devanagari), Sinhala, Slovak, Slovenian, Swahili, Swedish, Tajik, Tamil (Anjal, Tamil 99), Telugu, Thai, Tibetan, Tongan, Turkish, Turkmen, Ukrainian, Urdu, Uyghur, Uzbek (Arabic, Cyrillic, Latin), Vietnamese (Telex, VIQR, VNI), Welsh, Yiddish

QuickType keyboard support with autocorrection

Arabic, Arabic (Najdi), Bangla, Bulgarian, Catalan, Cherokee, Chinese – Simplified (Pinyin QWERTY), Chinese – Traditional (Pinyin QWERTY), Chinese – Traditional (Zhuyin), Croatian, Czech, Danish, Dutch, English (Australia, Canada, India, Japan, New Zealand, Singapore, South Africa, UK, U.S.), Estonian, Filipino, Finnish, Dutch (Belgium), French (Belgium), French (Canada), French (France), French (Switzerland), German (Austria), German (Germany), German (Switzerland), Greek, Gujarati, Hawaiian, Hebrew, Hindi (Devanagari, Latin, Transliteration), Hungarian, Icelandic, Indonesian, Irish Gaelic, Italian, Japanese (Kana), Japanese (Romaji), Korean (2-Set, 10-Key), Latvian, Lithuanian, Macedonian, Malay, Marathi, Norwegian (Bokmål), Norwegian (Nynorsk), Persian, Persian (Afghanistan), Polish, Portuguese (Brazil), Portuguese (Portugal), Punjabi, Romanian, Russian, Serbian (Cyrillic), Serbian (Latin), Slovak, Slovenian, Spanish (Latin America), Spanish (Mexico), Spanish (Spain), Swedish, Tamil (Anjal), Tamil (Tamil 99), Telugu, Thai, Turkish, Ukrainian, Urdu, Vietnamese (Telex)

QuickType keyboard support with predictive input

English (Australia, Canada, India, Japan, Singapore, South Africa, UK, U.S.), Chinese (Simplified, Traditional), French (Belgium, Canada, France, Switzerland), German (Austria, Germany, Switzerland), Italian, Japanese, Korean, Spanish (Latin America, Mexico, Spain), Arabic, Arabic (Najdi), Cantonese (Traditional), Dutch, Hindi (Devanagari, Latin), Portuguese (Brazil, Portugal), Russian, Swedish, Thai, Turkish, Vietnamese

QuickType keyboard support with multilingual input

English (Australia, Canada, India, Japan, New Zealand, Singapore, South Africa, UK, U.S.), Chinese – Simplified (Pinyin), Chinese – Traditional (Pinyin), French (France), French (Belgium), French (Canada), French (Switzerland), German (Germany), German (Austria), German (Switzerland), Italian, Japanese (Romaji), Portuguese (Brazil), Portuguese (Portugal), Spanish (Spain), Spanish (Latin America), Spanish (Mexico), Dutch (Belgium), Dutch (Netherlands), Hindi (Latin), Vietnamese

QuickType keyboard support with contextual suggestions

English (Australia, Canada, India, Japan, New Zealand, Singapore, South Africa, UK, U.S.), Chinese (Simplified), French (Belgium), French (Canada), French (France), French (Switzerland), German (Austria), German (Germany), German (Switzerland), Italian, Spanish (Latin America), Spanish (Mexico), Spanish (Spain), Arabic, Arabic (Najdi), Dutch (Belgium), Dutch (Netherlands), Hindi (Devanagari), Hindi (Latin), Russian, Swedish, Portuguese (Brazil), Turkish, Vietnamese

QuickPath keyboard support

English (Australia, Canada, India, Japan, New Zealand, Singapore, South Africa, UK, U.S.), Chinese (Simplified Pinyin QWERTY), Chinese (Traditional Pinyin QWERTY), French (Canada), French (France), French (Switzerland), German (Austria), German (Germany), German (Switzerland), Italian, Spanish (Latin America), Spanish (Mexico), Spanish (Spain), Portuguese (Brazil), Portuguese (Portugal), Dutch (Belgium), Dutch (Netherlands), Swedish, Vietnamese

Siri languages

English (Australia, Canada, India, Ireland, New Zealand, Singapore, South Africa, UK, U.S.), Spanish (Chile, Mexico, Spain, U.S.), French (Belgium, Canada, France, Switzerland), German (Austria, Germany, Switzerland), Italian (Italy, Switzerland), Japanese (Japan), Korean (Republic of Korea), Mandarin Chinese (China mainland, Taiwan), Cantonese (China mainland, Hong Kong), Arabic (Saudi Arabia, United Arab Emirates), Danish (Denmark), Dutch (Belgium, Netherlands), Finnish (Finland), Hebrew (Israel), Malay (Malaysia), Norwegian (Norway), Portuguese (Brazil), Russian (Russia), Swedish (Sweden), Thai (Thailand), Turkish (Türkiye)

Dictation languages

English (Australia, Canada, India, Ireland, Malaysia, New Zealand, Philippines, Saudi Arabia, Singapore, South Africa, United Arab Emirates, UK, U.S.), Cantonese (China mainland, Hong Kong), Mandarin Chinese (China mainland, Taiwan), French (Belgium, Canada, France, Luxembourg, Switzerland), German (Austria, Germany, Switzerland), Italian (Italy, Switzerland), Japanese, Korean, Spanish (Chile, Colombia, Mexico, Spain, U.S.), Portuguese (Brazil, Portugal), Arabic (Kuwait, Qatar, Saudi Arabia, United Arab Emirates), Catalan, Croatian, Czech, Danish, Dutch (Belgium, Netherlands), Finnish, Greek, Hebrew, Hindi, Hungarian, Indonesian, Malay, Norwegian (Bokmål), Polish, Romanian, Russian, Shanghainese (China mainland), Slovak, Swedish, Thai, Turkish, Ukrainian, Vietnamese

Monolingual dictionary support

English (UK, U.S.), Chinese (Simplified, Traditional, Traditional – Hong Kong), Danish, Dutch, French, German, Hebrew, Hindi, Italian, Japanese, Korean, Norwegian, Portuguese, Russian, Spanish, Swedish, Thai, Turkish

Idiom dictionary support

Simplified Chinese, Traditional Chinese – English, Cantonese – English

Bilingual dictionary support

Arabic – English, Bangla – English, Chinese (Simplified) – English, Chinese (Traditional) – English, Czech – English, Dutch – English, Finnish – English, French – English, French – German, German – English, Gujarati – English, Hindi – English, Hungarian – English, Indonesian – English, Italian – English, Japanese – English, Japanese – English, Polish – English, Portuguese – English, Russian – English, Spanish – English, Tamil – English, Telugu – English, Thai – English, Urdu – English, Vietnamese – English

Thesaurus

English (UK, U.S.), Chinese (Simplified)

Spell check

English (Australia, Canada, India, Japan, New Zealand, Singapore, South Africa, UK, U.S.), French (Belgium, Canada, France, Switzerland), German (Austria, Germany, Switzerland), Italian, Spanish (Latin America, Mexico, Spain), Arabic, Arabic (Najdi), Bulgarian, Czech, Danish, Dutch (Netherlands, Belgium), Finnish, Greek, Hindi (Devanagari), Hungarian, Irish Gaelic, Norwegian (Bokmål, Nynorsk), Polish, Portuguese (Brazil, Portugal), Punjabi, Romanian, Russian, Swedish, Telugu, Turkish, Vietnamese

Apple Pay supported regions

Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Belarus, Belgium, Brazil, Bulgaria, Canada, China mainland, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Faroe Islands, Finland, France, Georgia, Germany, Greece, Greenland, Guernsey, Hong Kong, Hungary, Iceland, Ireland, Isle of Man, Israel, Italy, Japan, Jersey, Kazakhstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Macao, Malaysia, Malta, Mexico, Moldova, Monaco, Montenegro, Netherlands, New Zealand, Norway, Palestine, Peru, Poland, Portugal, Qatar, Romania, Russia, San Marino, Saudi Arabia, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, UK, Ukraine, United Arab Emirates, U.S., Vatican City

Video Playback

- Supported formats include HEVC, H.264, and ProRes
- HDR with Dolby Vision, HDR10, and HLG

Audio Playback

- Supported formats include AAC, MP3, Apple Lossless, FLAC, Dolby Digital, Dolby Digital Plus, and Dolby Atmos
- Spatial Audio playback
- User-configurable maximum volume limit

Mail Attachment Support

Viewable document types

.jpg, .tiff, .gif (images); .doc and .docx (Microsoft Word); .htm and .html (web pages); .key (Keynote); .numbers (Numbers); .pages (Pages); .pdf (Preview and Adobe Acrobat); .ppt and .pptx (Microsoft PowerPoint); .txt (text); .rtf (rich text format); .vcf (contact information); .xls and .xlsx (Microsoft Excel); .zip; .ics; .usdz; .pkpass (Wallet)

Environmental Requirements

- Operating ambient temperature: 32° to 95° F (0° to 35° C)
- Nonoperating temperature: -4° to 113° F (-20° to 45° C)
- Relative humidity: 5% to 95% noncondensing
- Operating altitude: tested up to 10,000 feet (3000 m)

iPad Pro and the Environment

iPad Pro is designed with the following features to reduce its environmental impact: 13 See the iPad Pro Product Environmental Reports

Made with better materials

100% recycled aluminum in the enclosure

- 100% recycled rare earth elements in all magnets
- 100% recycled tin in the solder of multiple printed circuit boards
- 100% recycled gold in the plating of multiple printed circuit boards
- 100% recycled copper in the foil of the main logic board
- 35% or more recycled plastic in multiple components

Energy efficient

ENERGY STAR® certified14

Smarter chemistry¹⁵

- · Arsenic-free display glass
- Mercury-, BFR-, PVC-, and beryllium-free

Green manufacturing

- Apple's Zero Waste Program helps suppliers eliminate waste sent to landfill
- All final assembly supplier sites are transitioning to 100% renewable energy for Apple production

Responsible packaging

- 100% of virgin wood fiber comes from responsibly managed forests
- 98% fiber-based packaging and no outer plastic wrap

Apple and the Environment

We're committed to making our products without taking from the earth, and to become carbon neutral across our entire business, including products, by 2030.

- ♦ The displays have rounded corners. When measured diagonally as a rectangle, the iPad Pro 12.9-inch screen is 12.9 inches, the iPad Pro 11-inch screen is 11 inches, the iPad Air screen is 10.86 inches, the iPad screen is 10.86 inches, and the iPad mini screen is 8.3 inches. Actual viewable area is less.
- ♦♦ Data plan required. 5G and LTE 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/ipad/cellular.
- ♦♦♦ USB-C to Apple Pencil Adapter required to work with iPad (10th generation). Subject to availability.
 - 1. Available space is less and varies due to many factors. Storage capacity subject to change based on software version, settings, and iPad model. 1GB = 1 billion bytes; 1TB = 1 trillion bytes. Actual formatted capacity less.
 - 2. Size and weight vary by configuration and manufacturing process.

- 3. 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.
- 4. Wi-Fi 6E not available in China mainland.
- 5. Data plan required. 5G, Gigabit LTE, 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/ipad/cellular.
- 6. Cellular data plan is sold separately. The model you purchase is configured to work with a particular cellular network technology. Check with your carrier for compatibility and cellular data plan availability.
- 7. Not all carriers support eSIM. See your carrier for details. Not available in China mainland.
- 8. 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.
- 9. Standard dynamic range video content only.
- 10. Testing conducted by Apple in September 2022 using preproduction iPad Pro 11-inch (4th generation) and iPad Pro 12.9-inch (6th generation) units and software. Testing consisted of full battery discharge while performing each of the following tasks: video playback and internet browsing using Wi-Fi or cellular data network (cellular models subscribed to LTE and 5G carrier networks). Video content was a repeated 2-hour 23-minute movie purchased from the iTunes Store. Internet over Wi-Fi and cellular data network tests were conducted using dedicated web servers, browsing snapshot versions of 20 popular web pages. All settings were default except: Wi-Fi was associated with a network (except for internet browsing over cellular data network); the Wi-Fi feature Ask to Join Networks and Auto-Brightness were turned off; Brightness was set to 50%; and WPA2 encryption was enabled. Battery life depends on device settings, usage, network, and many other factors. Battery tests are conducted using specific iPad units; actual results may vary.
- 11. Wireless broadband recommended; fees may apply.
- 12. In China mainland, you can use Apple Pay on the web in Safari only on compatible iPhone and iPad models using iOS 11.2 or later.
- 13. Data accurate as of product launch.
- 14. ENERGY STAR and the ENERGY STAR mark are registered trademarks owned by the U.S. Environmental Protection Agency.

15. <u>Apple Regulated Substances Specification</u> describes Apple's restrictions on the use of certain chemical substances in materials in Apple products, accessories, manufacturing processes, and packaging used for shipping products to Apple's end-customers. Restrictions are derived from international laws or directives, regulatory agencies, eco-label requirements, environmental standards, and Apple policies. Every Apple product is free of PVC and phthalates except for AC power cords in India, Thailand (for two-prong AC power cords), and South Korea, where we continue to seek government approval for our PVC and phthalates replacement. Apple products comply with the European Union Directive 2011/65/EU and its amendments, including exemptions for the use of lead such as high-temperature solder. Apple is working to phase out the use of these exempted substances for new products where technically possible.

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