



arlo  
ULTRA



# Arlo Ultra Features



- Before completing the following training, attain a passing score in the Arlo Wire-Free module
- Arlo Ultra includes:
  - 4K video resolution with high dynamic range (HDR)
  - Auto Zoom & Tracking
  - Color night vision
  - 180-degree field of view
  - Integrated spotlight
  - Dual microphones for two-way audio
  - Advanced SmartHub
  - New Magnetic mounting solution
  - Magnetic charging
  - Modular design
  - Improved motion detection and activity zones
  - Integrated smart siren
  - 1-year Arlo Smart subscription



# Arlo Ultra Features



## Auto-Zoom & Tracking

Auto-focus on moving objects with clarity and detail



## Rechargeable Batteries

Convenient and long-lasting takes the expense out of security



## Crystal Clear 2-Way Audio

Noise canceling audio with wind and noise reduction



## Weather-Resistant

Put Arlo camera anywhere—indoors or out



## Advanced SmartHub

Works with other smart home devices for simplified integration



## 4K Video with HDR

4K HDR provides a clearer picture of every detail



## Color Night Vision

See what's lurking with color night vision or black & white



## Integrated Spotlight

Light up the night and ward off unwelcome guests



## 180° Viewing Angle

Panoramic view with auto-image correction reduces fish eye effect



## Fast & Easy Wire-Free Setup

Magnetic mount makes it easy to install and adjust



## Magnetic Charging

Fast charging cable easily snaps into place



## Custom Activity Zones

Create specific areas of focus to reduce false alerts



## Built-In Smart Siren

Trigger your siren remotely or automatically during an event

- Arlo Ultra is the first Arlo camera that records 4K video.
  - With 4K, the camera can capture higher-quality videos, enabling a clearer image with greater detail.
- Arlo Ultra also uses high dynamic range (HDR) to see clearly in high-contrast settings.
  - The camera automatically determines and adjusts IQ settings based on the external environment to ensure that image quality maintains in shadows or bright lighting.
- Auto Zoom & Tracking allows for enhanced focus on moving objects with increased clarity and detail.
  - When Arlo Ultra detects motion, it zooms in and tracks the movement while the object is within Arlo Ultra's field of view.
- Color night vision on Arlo Ultra enables night-time activity to be seen in color and with better quality.
- Arlo Ultra has a 180-degree viewing angle with auto-image correction that reduces the fisheye effect.
- Arlo Ultra comes equipped with a built-in spotlight that activates when motion is detected within Arlo Ultra's field of view.



# Specifications



## Requirements

- High-speed Internet connection
- Available Ethernet port on your router

## Certifications

- FCC, IC, CE

## Dimensions & Weight

- SmartHub:
  - 6.02 x 5.5 x 2 in (153 x 140 x 52.4 mm)
  - .66lb (300g)
- Camera:
  - 3.5 x 2.0 x 3.0 in (89 x 52 x 78.4 mm)
  - .72lb (331g)

## Warranty

- [www.arlo.com/warranty](http://www.arlo.com/warranty)

## Camera

- Resolution: Up to 4K (3840 x 2160)
- Format: H.264 and H.265
- High Dynamic Range (HDR)
- Field of view: 180° diagonal
- Night Vision
  - Illuminates up to 25 feet
  - Dual 850nm LEDs
- Integrated spotlight
- 12x digital zoom
- Audio: Speaker and Dual Microphones
- Frequency: 2.4Ghz
- Range: Up to 300 feet line of sight
- Wire-Free motion detection
  - Adjustable up to 25 feet
- Adjustable sound detection
- Automatic email alerts and push notifications
- Rechargeable battery and AC power options
- Magnetic charging and mounting
- Battery life varies based on settings, usage, & temperature
- Weather-Resistant
  - Operating temperature: -4° F to 113° F (-20° C to 45° C)
- Google Assistant, Amazon Alexa, and more

## Base Station

- WiFi
  - Frequency: 2.4GHz
  - Range: 300 feet line of sight
- ZWave, Zigbee, and ArloRF™ ready
- MicroSD slot for local storage
- Ethernet interface port
- Status LED
- IP Configuration DHCP
- Internal antenna

The Ultra “Base Station” is referred to as the Ultra **SmartHub**

# Arlo Ultra Model Numbers



arlo ULTRA	Model Number
Ultra SmartHub	VMB5000
Ultra Add On Camera	VMC5040
Ultra 1-camera system	VMS5140
Ultra 2-camera system	VMS5240
Ultra 3-camera system	VMS5340
Ultra 4-camera system	VMS5440

Accessories	Model Number
Magnetic Wall Mount (2 Pack)	VMA5000
Solar Panel with Magnetic Power Cable	VMA5600
Dual Charging Station	VMA5400C
Rechargeable Battery	VMA5400
Magnetic Charging Cable (Indoor) (8 feet)	VMA5000C
Magnetic Charging Cable (Outdoor) (25 feet)	VMA5600C

# Arlo Ultra Kits



- Every Arlo Ultra kit includes a 1-year subscription to Arlo Smart Premier



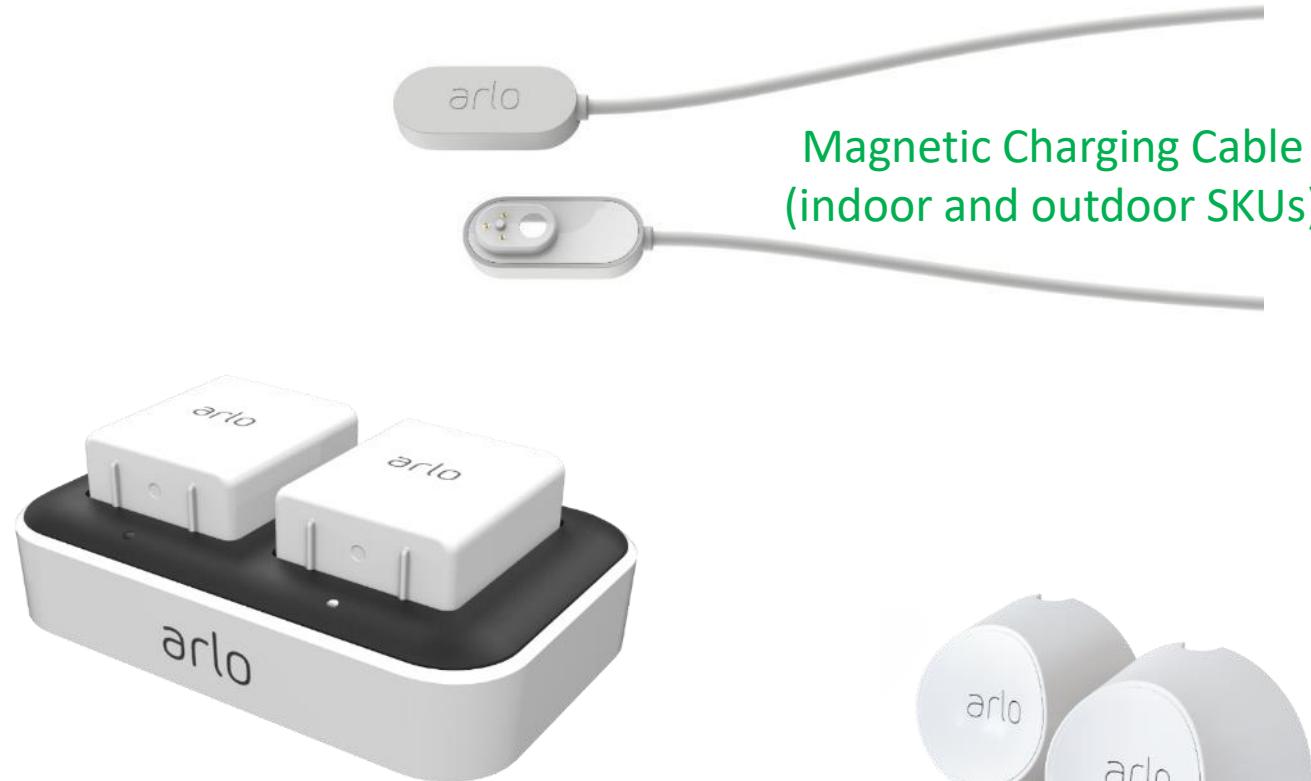
# Arlo Ultra Accessories



- The accessories launched with Arlo Ultra are also used for Arlo Pro 3



Solar Panel



Dual Battery Charging Station +  
New Rechargeable Batteries



Magnetic Mount

# Magnetic Charging Cable



- The magnetic charger provides an easy, snap-in, weather-resistant charging solution



- The magnetic charger included with Ultra cameras is the **indoor** version
  - Customers will need to buy the outdoor version separately

# Arlo Ultra Camera Mounts



- The Arlo Ultra Camera has two types of mounts
  - Magnetic Mount:



- Security Mount:



- The magnetic mount provides unlimited mounting possibilities
  - A simple-to-use design provides a secure way to mount from almost anywhere

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# Arlo Ultra Camera Mounts



The amount of Magnetic and Security mounts depends on the camera kit purchased:

Camera Kit	Magnetic Mount	Security Mount
VMS5140 (1 camera kit)	1	0
VMS5240 (2 camera kit)	1	1
VMS5340 (3 camera kit)	2	1
VMS5440 (4 camera kit)	2	2



Magnetic Mount



Security Mount

# Arlo Ultra Camera Mounts



- The new magnetic mount is concave and fits perfectly with the shape of the rear of the camera
- This allows a more precise fit between the mount and camera, and it enables new ways to mount the Arlo Ultra camera, including: walls, tabletops, and underneath ceilings
- The strong magnetic force between Arlo Ultra and the mount provides peace of mind that the camera will stay in position



# Arlo Ultra Camera Mounts



- The magnetic mount also includes an integrated cable strain relief to keep cables neat and organized



# Future Accessories



- Future Purchase Options include the Total Security Mount as well as different color camera housings:



Total Security Mount



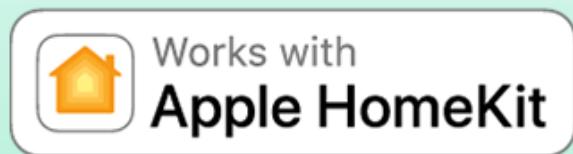
Replaceable Camera Housings in  
different colors/patterns

# Arlo Ultra Partnerships

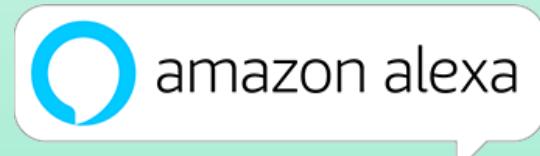


Arlo Ultra works with:

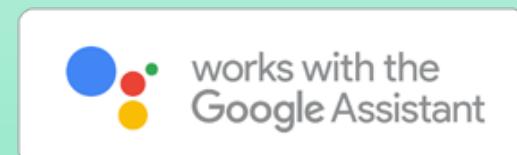
- Apple HomeKit



- Amazon Alexa



- Google Assistant



(HomeKit functionality added - October 2019)



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Ultra  
Camera

# Arlo Ultra Camera



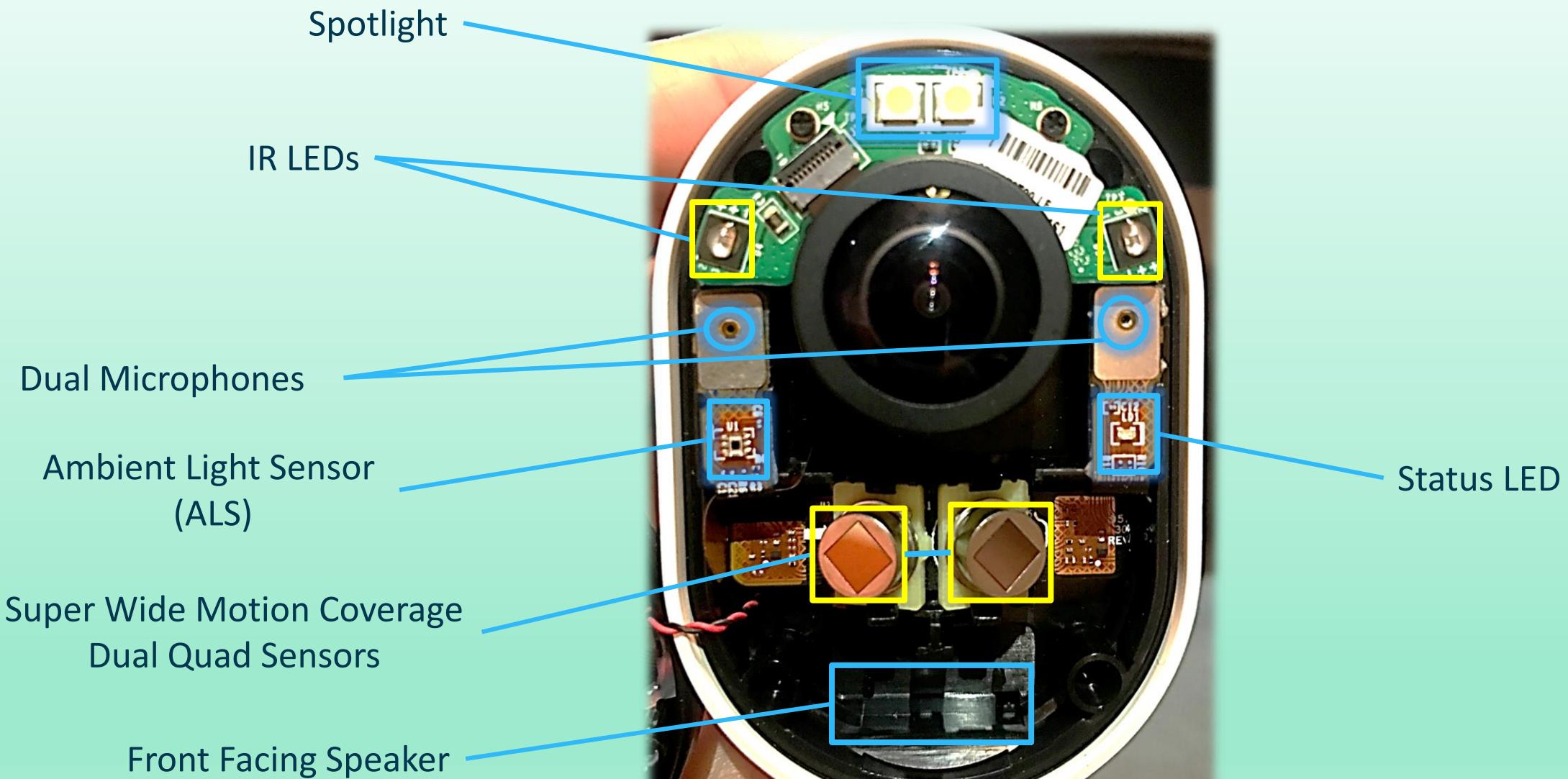
- Resolution: Up to 4K (3840 x 2160)
- Format: H.264 and H.265
- Field of view: 180° diagonal
- Night Vision
  - Illuminates up to 25 feet
  - Dual 850nm LEDs
- Integrated spotlight
- 12x digital zoom
- Audio: Speaker and Dual Microphones
- Frequency: 2.4Ghz and 5Ghz (dual band)
- Range: Up to 300 feet line of sight
- Wire-Free motion detection
  - Adjustable up to 25 feet
- Adjustable sound detection
- Automatic email alerts and push notifications
- Rechargeable battery and AC power options
- Magnetic charging and mounting
- Battery life varies based on settings, usage, & temperature
- Weather-Resistant
  - Operating temperature: -4° F to 113° F (-20° C to 45° C)



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# Arlo Ultra Camera Differences



Feature	Pro	Pro 2	Ultra
Image Sensor	720p	1080p	4K plus HDR
Power	A1 batt	A1 batt	New battery, new connector, regular 5V cam charger
Image HFOV (Horizontal Field of View)	100	110	150
Image DFOV (Diagonal Field of View)	110	130	<b>180</b>
Image VFOV (Vertical Field of View)	55	55	80
Audio	Half-Duplex, 1 mic	Half-Duplex, 1 mic	Full-Duplex, dual mic
Spotlight	No	No	Yes
Motion Sensor	1, ~110 degrees	1, ~110 degrees	2, ~160 degrees
WiFi	2.4G	2.4G	2.4G and 5Ghz
Case	Fixed	Fixed	Removable case (optional colors)
Base Station/SmartHub	2.4G, USB storage	2.4G, USB storage	2.4/5G, Micro SD storage. Faster 4-core CPU.
Siren feature	On Base Station	On Base Station	In camera
SmartHub features (aka Connected Home)	N/A	N/A	Future SW upgrade to Zwave, ArloRF, and Zigbee for lighting, locks, security, etc.
LEDs	3 LED	3 LED	1 LED only (amber, blue)

- Comparison with the Arlo Pro/Pro 2 battery:
  - Pro/Pro 2 battery:
    - 7.2V 2440mAh battery (total watt hours is 17.57Wh)
  - Ultra battery
    - **3.8V 4800mAh** battery (total watt hours is 18.24Wh)
- The batteries are at different voltage levels, making the Ultra battery a longer lasting battery in terms of watt hours (as long as the given load is the same)



Arlo Pro/Pro Battery  
VMA4400



Arlo Ultra Battery  
VMA5400

# Arlo Ultra Camera Housing and Battery Access



Unlike previous Arlo cameras, Arlo Ultra is made of separate parts. The camera and battery are together in one part, and the camera housing acts as a protective shell in the second part.

- To access the Arlo Ultra battery, remove the outer shell housing from the camera body
  - Press the button on the charging port underneath the camera



- A clicking sound occurs and the camera partially slides out
- Pull the camera out of the housing to access the battery



- Arlo Ultra has the best in class wide field of view for a panoramic view
- With a new image sensor, new lens, and new streaming architecture:
  - See more in every shot
  - See details like never before

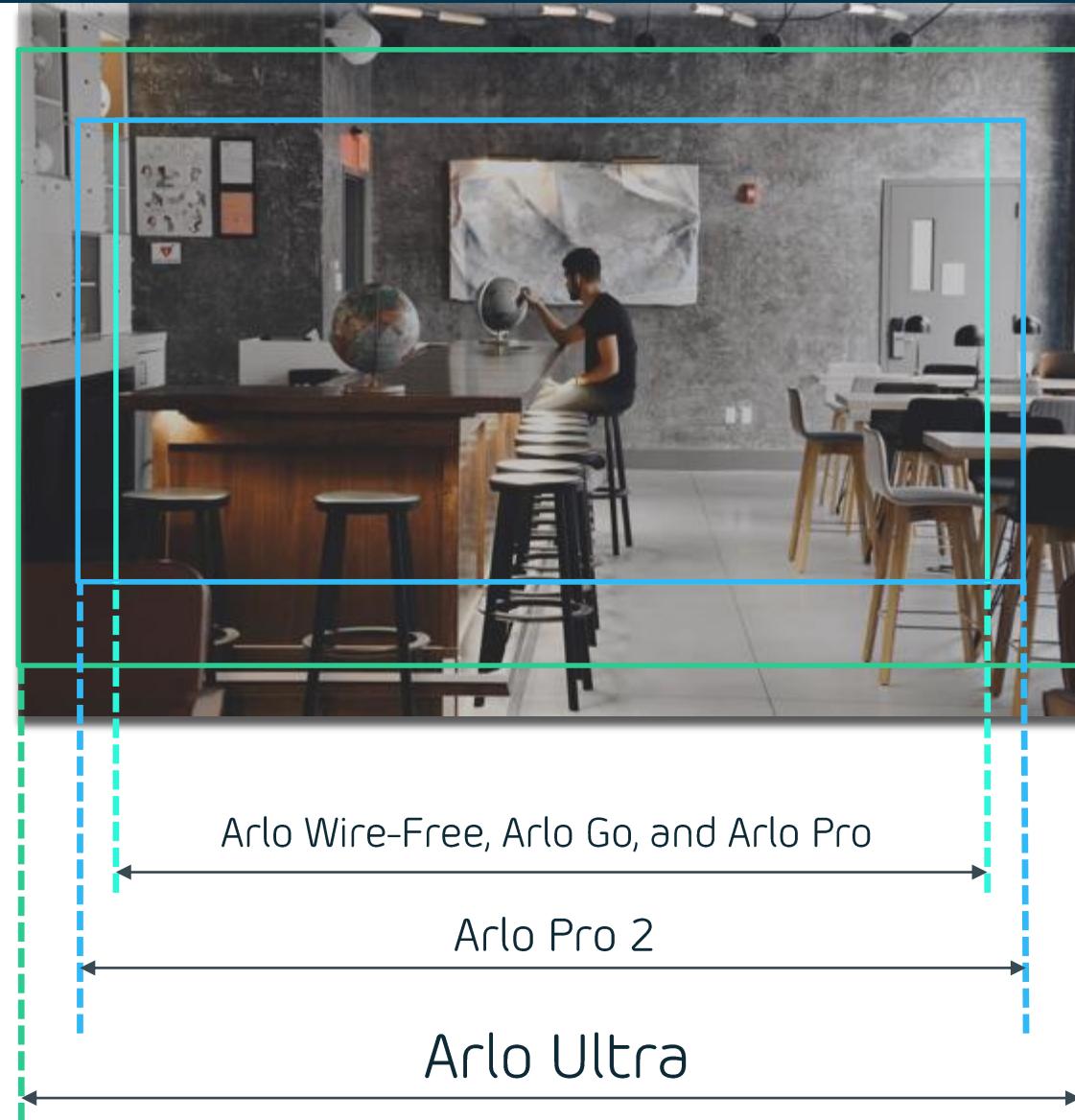


Product	Horizontal FOV	Diagonal FOV	Vertical FOV
Ultra	150	180	60-80
Pro2	110	130	55
Pro	100	110	55
Arlo	90	110	55

# Arlo Ultra Camera Field of View



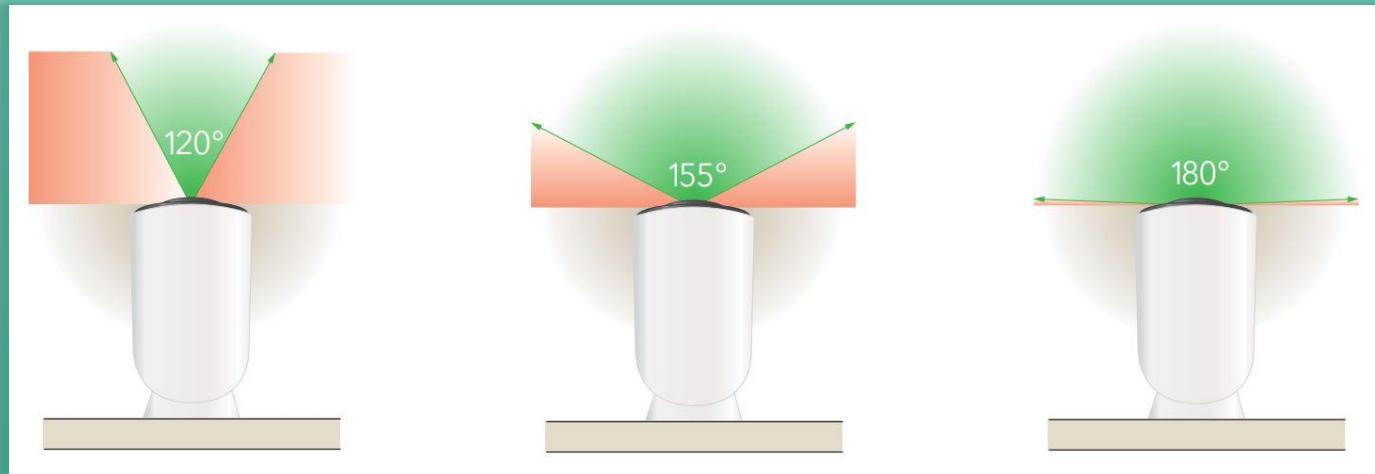
- With a 180-degree field of view, Arlo Ultra covers a wider range than any other Arlo camera



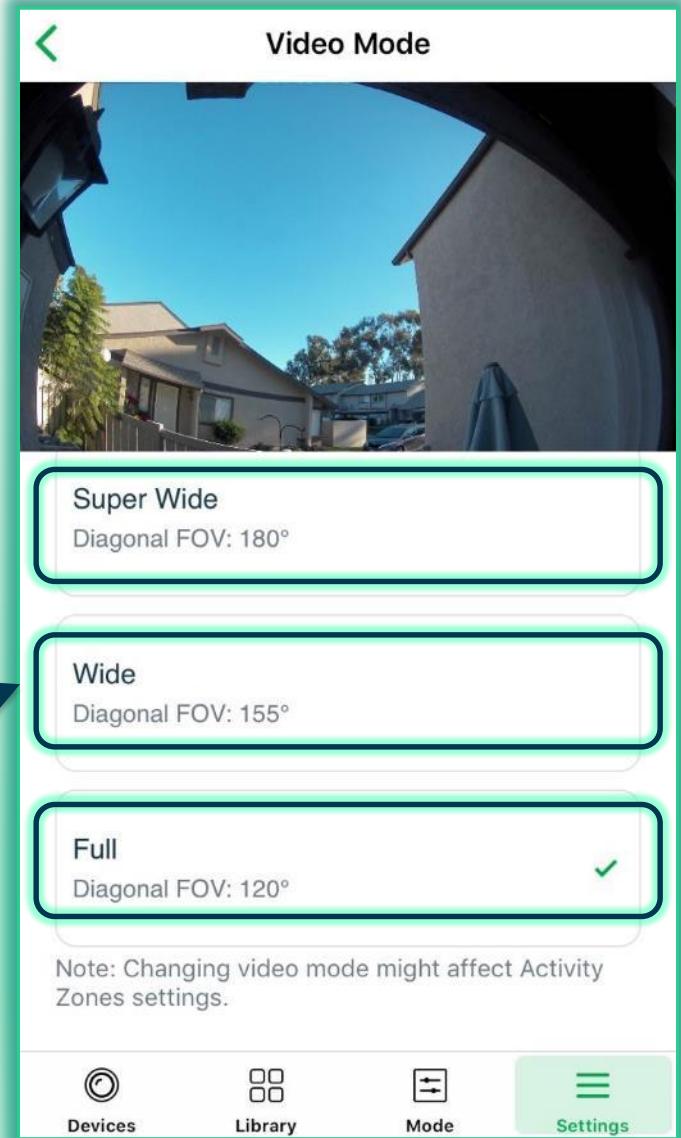
# Arlo Ultra Camera Field of View



- The field of view (FOV) can be adjusted to 180 degrees (Super Wide), 155 degrees (Wide), or 120 degrees (Full)



- To change the FOV, open the App and tap **Settings > My Devices > Ultra Camera > Video Settings > Video Mode**
  - Tap **Super Wide, Wide, or Full**



- Frame rate is not related to resolution
- The frame rate is driven by the video mode setting and whether the camera is streaming in day or night mode
  - In night mode, the frame rate is **15** frames per second (fps)
  - In day mode, the frame rate is **24** fps
- If the **Wide** or **Full** video mode is selected, the frame rate will drop to **20** fps in day mode
- The frame rate will also drop in response to congestion of the WiFi link
  - When there is WiFi congestion, the frame rate can drop to **12** fps (day or night)



# Arlo Ultra Camera Integrated Spotlight



- Illuminates area right in front of camera; approximately 15 - 25 feet
  - Color mode at night within 15 feet
  - It does not fully illuminate the area
- The spotlight is bright and will get people's attention
  - There are different options in the UI to control the spotlight behavior
    - Constant, Flash, or Pulsate
    - The spotlight can turn on with motion detection or it can be turned on manually



# Arlo Ultra Camera Color Night Vision



- Typical night-time video footage from security cameras is displayed in black and white.
- Arlo Ultra can output images in color, even at night



Typical Night Vision



Color Night Vision

# Arlo Ultra Camera Dual Microphones



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- Arlo Ultra uses two microphones to create Beamforming for spatial filtering of sound
  - This lets Arlo Ultra hone-in on sound from a particular area or subject
  - The microphones also enable noise suppression and wind noise reduction



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- Arlo Ultra uses a new front facing speaker
- New Speaker with Codec Solution:
  - Full 2-way audio (no walkie-talkie)
  - Allows for full conversational audio
  - Louder and more rich sounding conversations
- The Siren is now played directly from the **camera** instead of the base station/SmartHub
  - It can be set to trigger when motion or audio is detected or triggered manually
    - Manual Siren activation can be accomplished by tapping the Shield icon  on the main Arlo app screen
    - Siren triggering through motion or audio detection is set up in Modes and Rules

# Arlo Ultra Camera Audio Settings



- Ultra Camera settings such as **Reduce Wind Noise**, **Microphone**, and **Speaker** can be toggled On/Off in the Audio Settings
- Access these settings in the App by tapping **Settings > My Devices > Ultra Camera > Audio Settings**



# Arlo Ultra Camera Video Quality



Competition with fisheye distortion

Arlo Ultra gives a wider coverage area **without** fisheye distortion



Arlo Ultra Super Wide view with fisheye distortion **removed**

# Arlo Ultra Camera Video Quality



- High Dynamic Range (HDR) allows the user to see more detail and less washed out images
  - HDR solves the problem with over or under-exposed images of scenes with both bright and dark areas in the same picture.
- Arlo Ultra automatically determines when to use HDR.
  - HDR is optimized for outdoor environments.



No HDR



With HDR

# Arlo Ultra Camera Video Quality



## High Dynamic Range (HDR):

- Provides a clearer picture
- In the example to the right there is an area that is washed out by high contrast. This is when High Dynamic Range is needed.
- The Ultra camera will automatically determine and adjust the settings based on what it sees

Example of a high contrast scene



Too dark



Too bright



HDR ON = Just Right

# Arlo Ultra Camera Enhanced Zoom



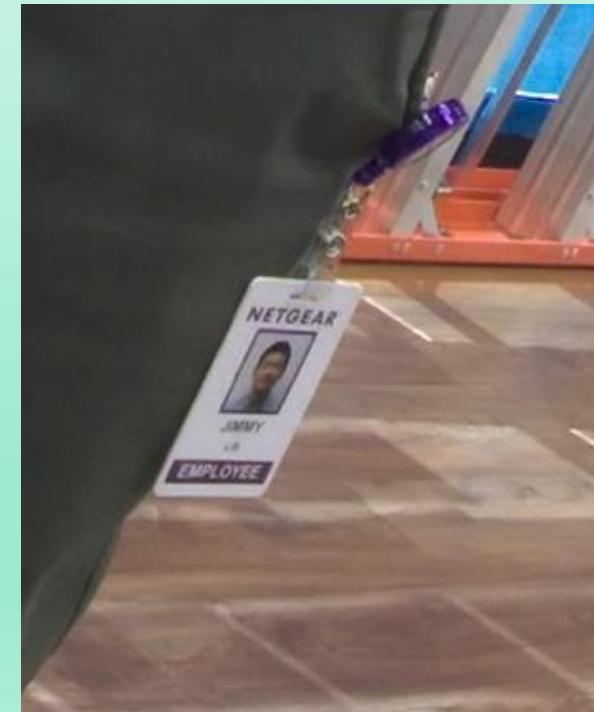
Enhanced Zoom maintains details even when the camera is zoomed in:

- After zooming in, the image is clear and there is minimum loss of detail without user intervention
- Enhanced zoom leverages the 4k image sensor and more pixels to see detail when zoomed in

Typical Digital Zoom



Enhanced Zoom



# Arlo Ultra Camera Auto Zoom & Tracking



- With Auto Zoom & Tracking, Arlo Ultra zooms in on the object and tracks its movement while the motion is within its field of view

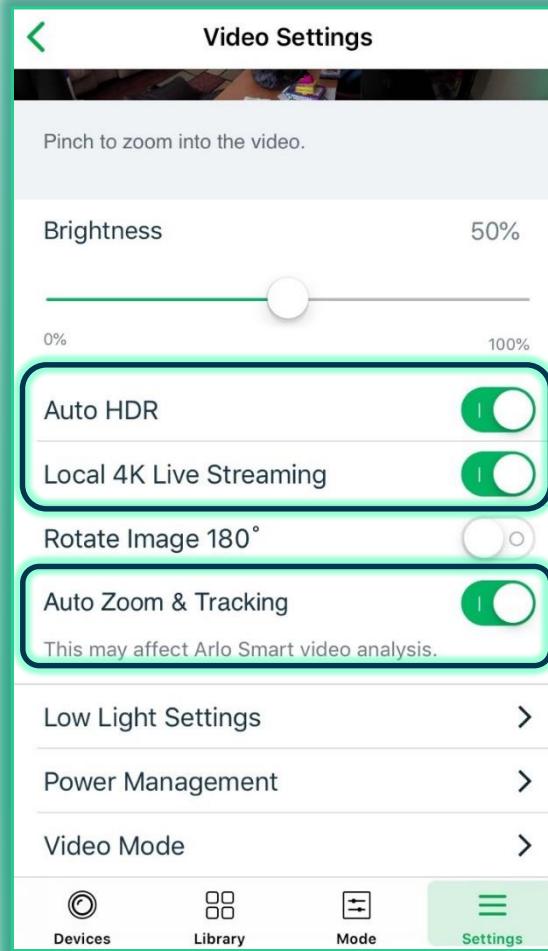
Hover over the image and click the Play button for a video example of this feature  
(video playback not available in PDF version of this training)



# Arlo Ultra Camera Video Settings



- Ultra Camera settings such as **Auto Zoom & Tracking**, **Auto HDR**, and **Local 4K Live Streaming** can be toggled On/Off in the Video Settings
- Access these settings in the App by tapping **Settings > My Devices > Ultra Camera > Video Settings**



Local 4K Live Streaming resolution is limited to two simultaneous streams

- Additional simultaneous streams will be in 1080p.

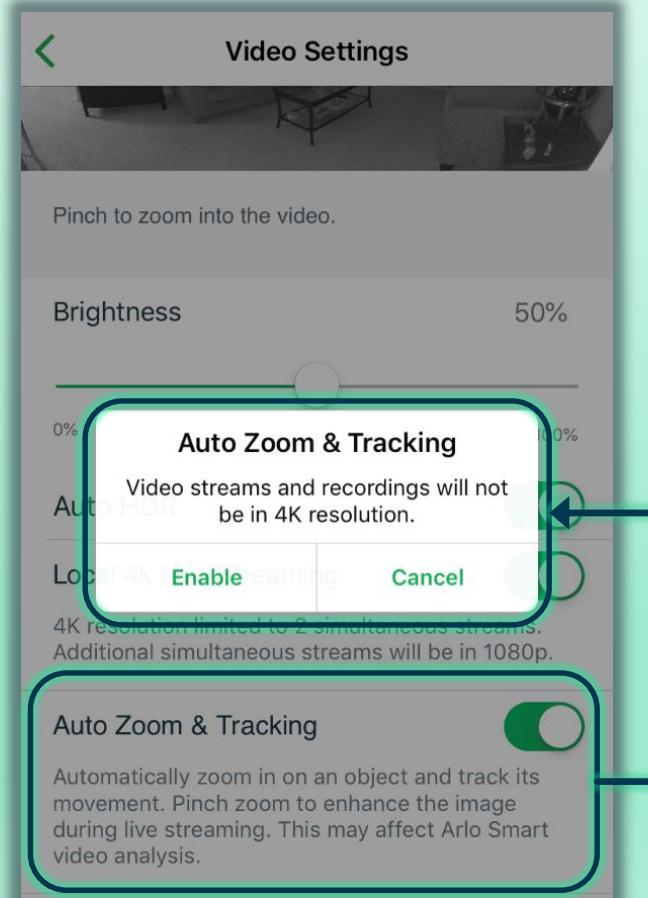
Adjust Spotlight and  
Night Vision settings by  
tapping **Low Light  
Settings**



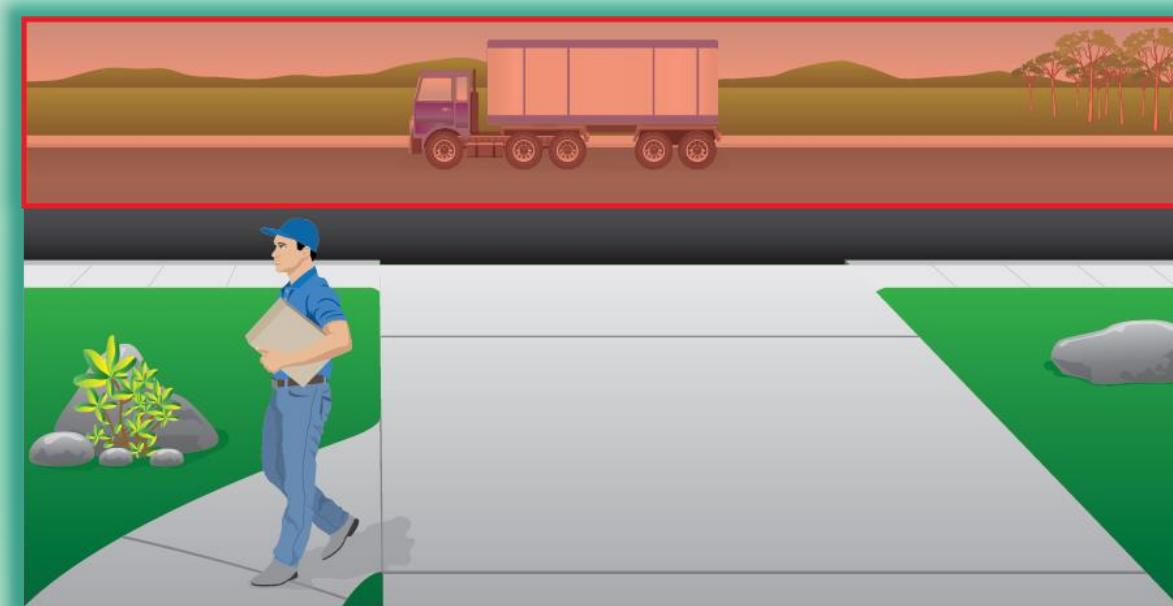
# Arlo Ultra Camera Video Settings



- When **Auto Zoom and Tracking** is enabled **Local 4K Live Streaming** will automatically be disabled
  - No 4K video streams or recording will be available when Auto Zoom & Tracking is enabled
  - Users will get an alert about 4K resolution when attempting to enable Auto Zoom & Tracking



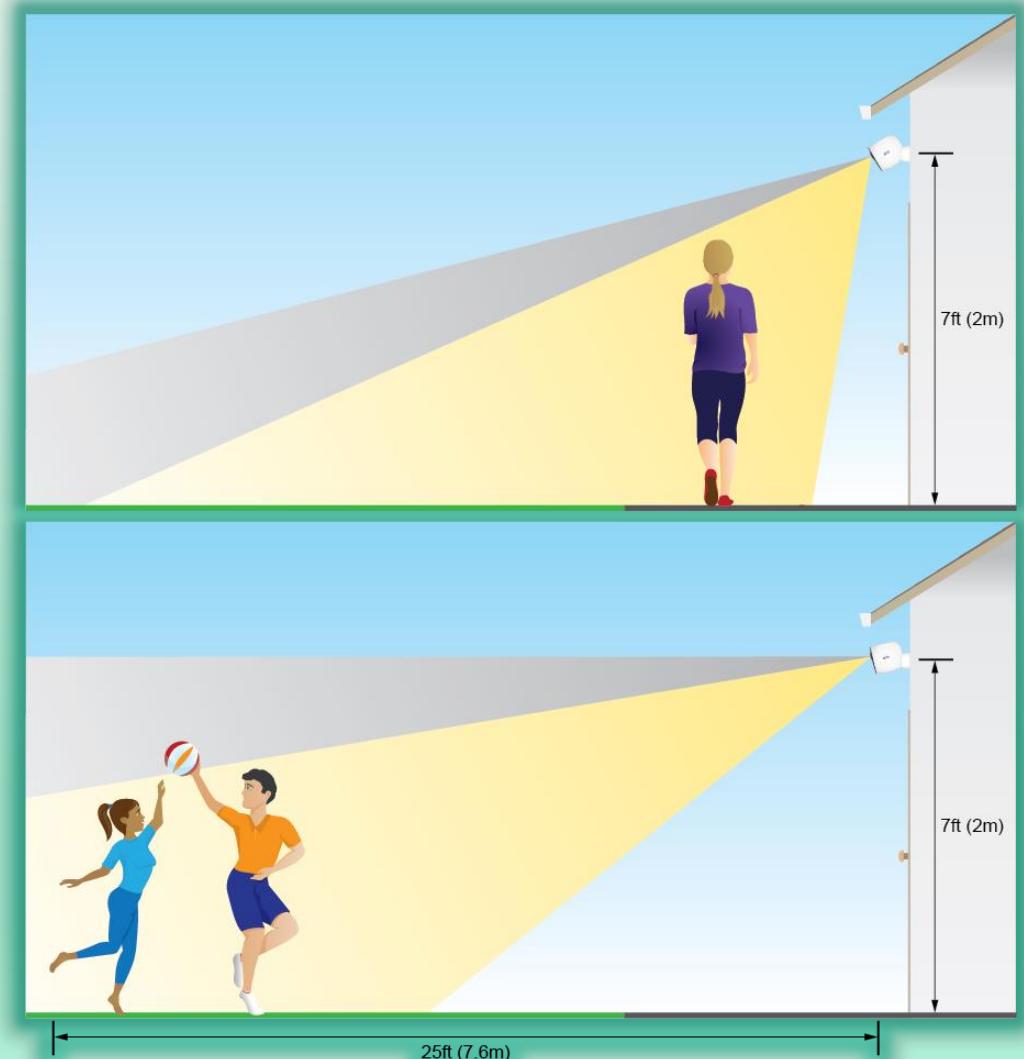
- The Arlo Ultra camera can be aimed and mounted in different ways to optimize the camera's ability to detect motion in specific areas
- The lower two-thirds of the camera's field of view is the motion-sensitive part of the image
- Aim the camera so that any motion detected appears within this part of the image



# Arlo Ultra Camera Positioning



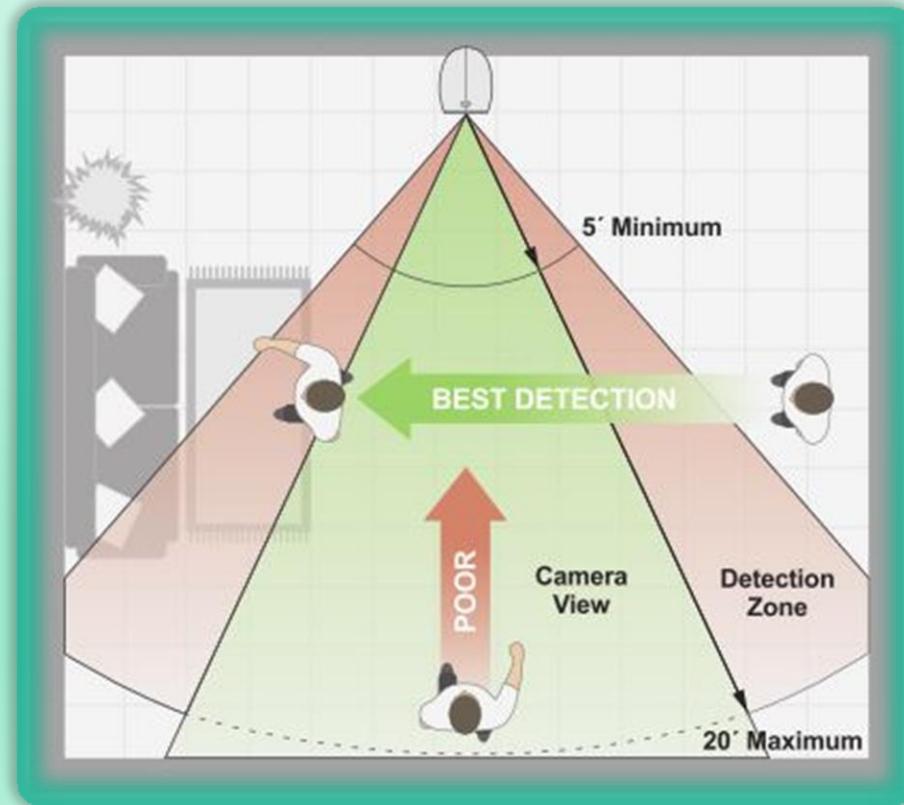
- To monitor motion closer to the camera, such as visitors at the front door, **mount the camera at least 7 feet (2 meters) high** and aim it so that visitors will appear in the lower two-thirds of the image
- This angle works well to avoid motion alerts for movement in the top third of the image, such as vehicles driving by
- To monitor motion occurring farther away, such as children playing on a lawn, **aim the camera higher** to frame the area within the lower two-thirds of the image



# Arlo Ultra Camera Positioning



- As known from previous wire-free cameras it is best to position the camera so that motion is moving from **side-to-side across its field of view** rather than directly toward or away from the camera
- Also, though the camera can detect motion up to 25 feet (7.6 meters) away, the best area for motion detection is **5 to 20 feet** (1.5 to 6 meters) from the camera position



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Ultra  
SmartHub



- The Arlo Ultra SmartHub helps to protect footage by adding a secure, personal network to the router
- SmartHub:
  - Regulates WiFi traffic
  - Improves battery life
  - Utilizes local storage
    - MicroSD cards are sold separately

# Arlo Ultra SmartHub



- Backwards compatible with Arlo Wire-Free and Pro/Pro 2/Pro 3 cameras
  - Existing cameras can be used, while replacing an existing base station with the Ultra SmartHub
  - Also compatible with Arlo Doorbell and Arlo Security Lights
- 2.4GHz and 5GHz Dual-Band Wi-Fi (Preferred 5GHz)
  - 2.4GHz gives the best coverage, but lots of other devices are using this same spectrum
  - 5Ghz gives the highest throughput, but range is more limited
  - Cameras will first attempt to connect at 5GHz
  - If the Received Signal Strength Indicator (RSSI) is -80 or worse the cameras will switch to the 2.4GHz band and remain on 2.4GHz
  - The switch from 5GHz to 2.4GHz could take up to 1 minute and cause cameras to go offline
  - Cameras will not automatically switch back to 5GHz unless the camera is restarted
- Connected Home radios for *future* SmartHub use
  - ArloRF – for future Arlo security sensors (sub-GHz frequencies)
  - Zwave (sub-GHz frequencies)
  - Zigbee
- MicroSD card for local storage
  - UHS-I / Class 10 or better is best
  - 16 GB or higher recommended



# Arlo Ultra SmartHub MicroSD Card

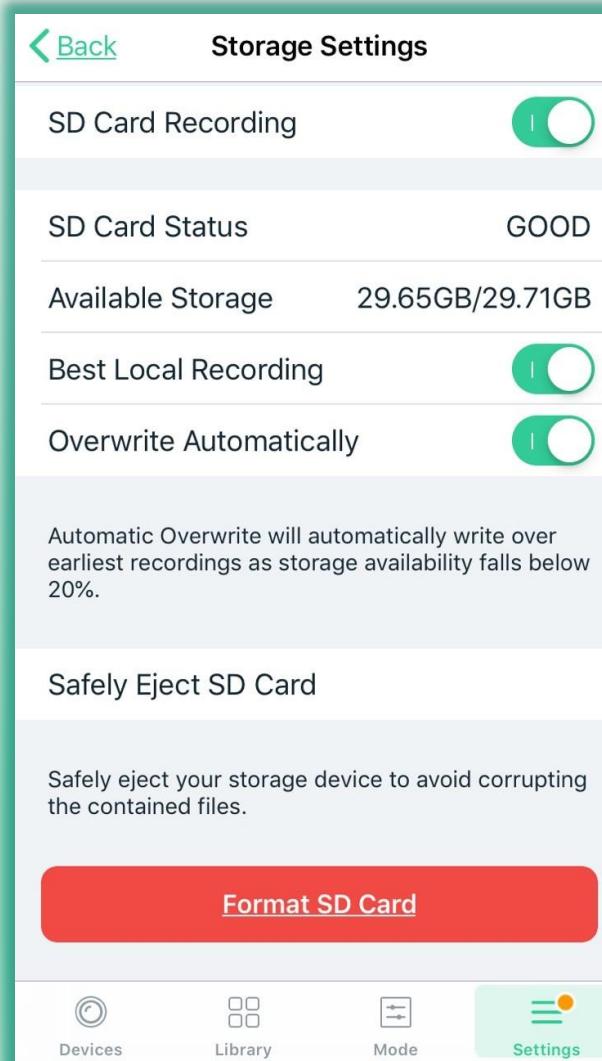


- Arlo Ultra uses a microSD card to save videos
- The Arlo SmartHub accepts microSD cards, SDHC, or SDXC.
  - Arlo recommends a microSD card with a minimum of 16 GB capacity, Speed Class 10, UHS1, V10
  - The Arlo SmartHub supports up to class 10 UHS-3 V90 class microSD cards
- To record 4K video to a microSD card, insert a microSD card into the microSD card slot located on the bottom of the Arlo SmartHub



## To view **SD Card Status** and **Available Storage**:

- Open the Arlo app and tap **Settings > My Devices > Ultra SmartHub > Storage Settings**



**SD Card Recording** and **Best Local Recording** can be turned On/Off in the **Storage Settings**

Best Local Recording will save 4K videos when using an Arlo Ultra camera

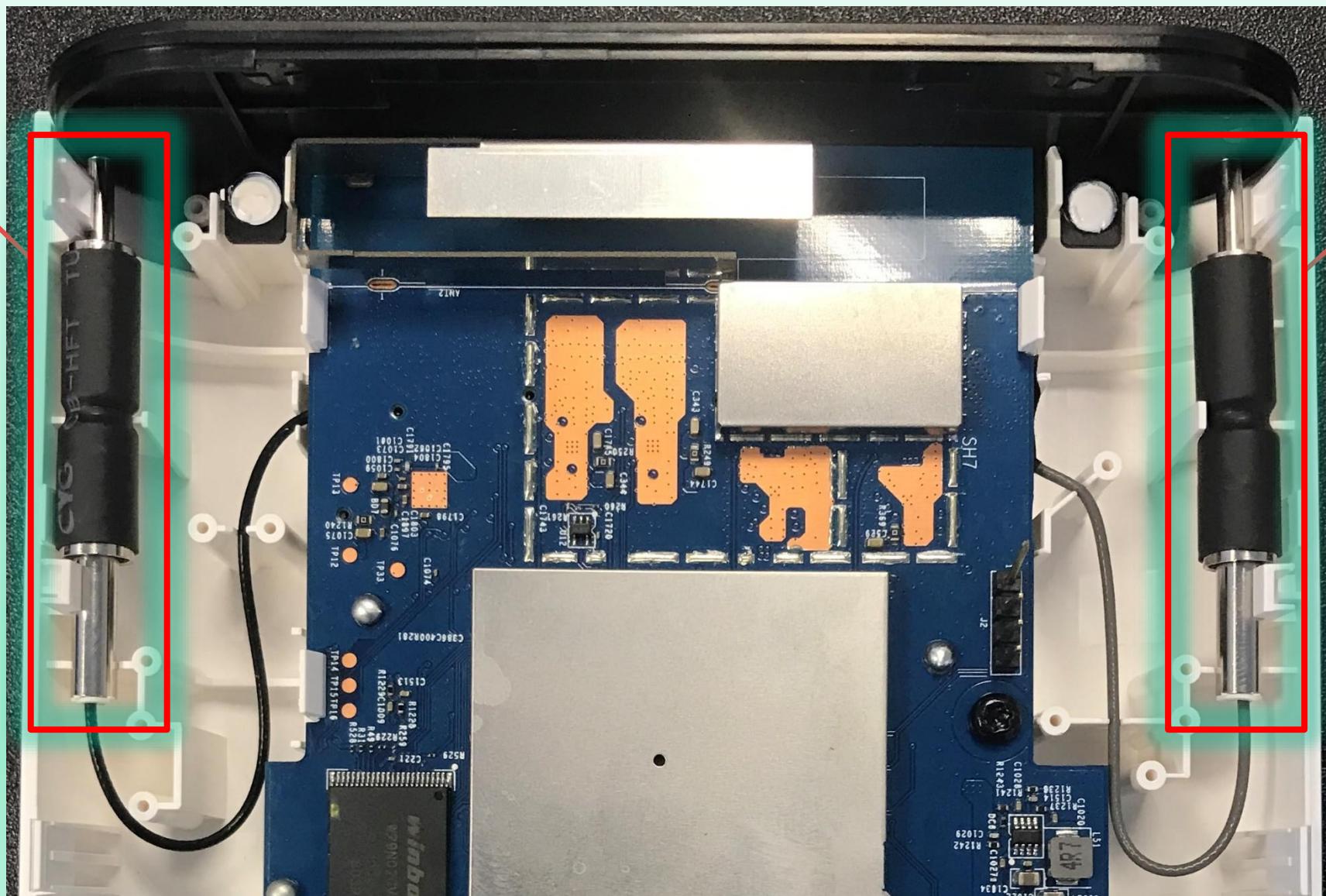
# Arlo Ultra SmartHub MicroSD Card Local Storage Capacities



- How much SD card storage does a **1-minute 4K recording** take?
- How many 1-minute recordings would a **128GB SD card** hold?
  - The Ultra camera only supports two resolutions: 4K and 1080p
  - When the user is managing the **Power Management** settings of the camera (Best Video, Optimized, Best Battery Life), only the bitrates are being changed and not the resolution on the camera.
  - The following table is based on constant bitrate during the stream, **per Power Management setting**, and should be used only as approximate guidance. (The number of recordings are also based on some of the card space reserved for file management)

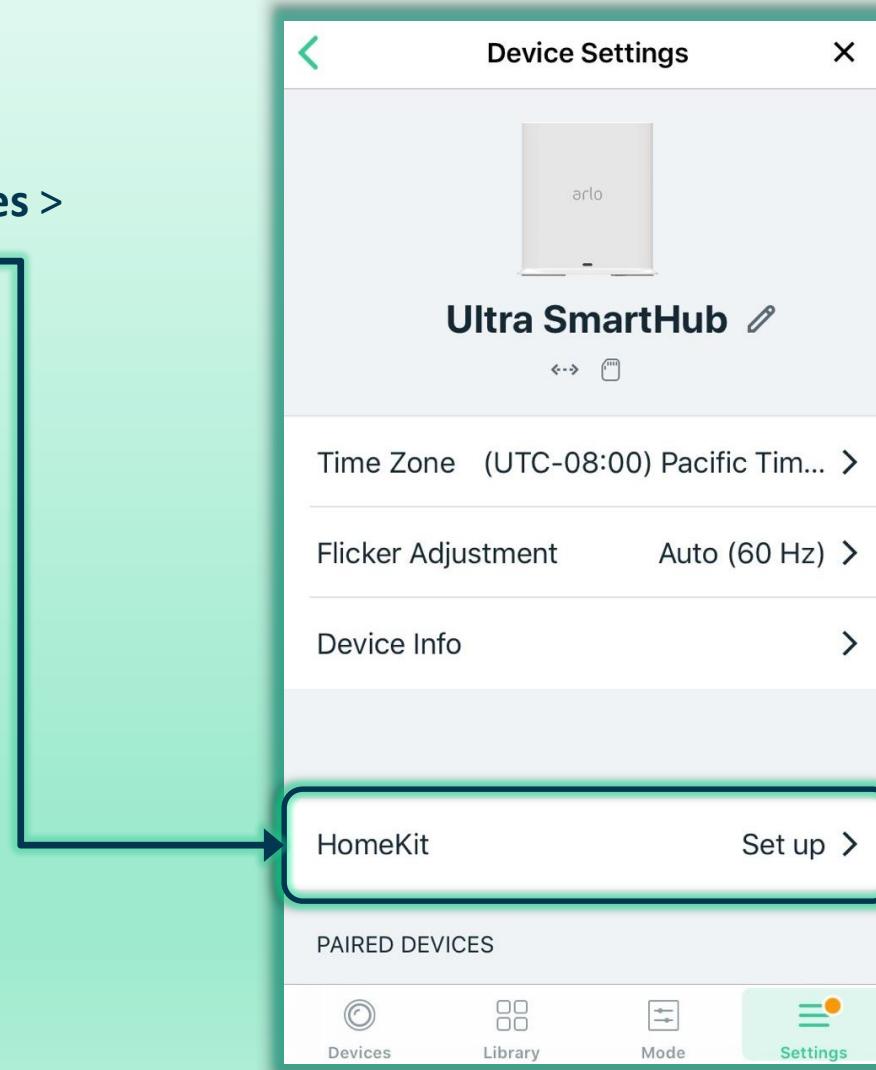
		Best Video	Optimized	Best Battery Life
4K	Target Bitrate	3 Mbps	1.5 Mbps	1 Mbps
	1 Minute Recording Size	22.5 MB	11.25 MB	7.5 MB
	Number of Recordings	5820	11645	17470
1080p	Target Bitrate	1 Mbps	768 Kbps	512 Kbps
	1 Minute Recording Size	7.5 MB	5.625 MB	3.75 MB
	Number of Recordings	17470	23395	34945

# Ultra SmartHub Internal Antennas



- To add Arlo Ultra to Apple HomeKit:

- Open the Arlo app and tap **Settings > My Devices > Ultra SmartHub > HomeKit Set up**





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## Ultra

# Troubleshooting

# Ultra Camera LED



## Ultra Camera LED Meanings:



### Slow Blinking Blue

- The camera is pairing with the SmartHub



### Fast Blinking Blue

- The camera has paired with the SmartHub



### Slow Blinking Amber

- The camera battery is low
- The camera can't be found, is out of range, or some other connection error occurred during the pairing process



### Fast Blinking Amber

- The camera failed to sync with the SmartHub



### Alternating Blue and Amber

- A firmware update is in progress
- A reset is in progress

**Note:** The Ultra Camera LED blinks blue once when it is first powered on



# Ultra SmartHub LED



## SmartHub LED Meanings:

**Note:** SmartHub blinks once when it is first powered on

### Solid Blue ■

- Connected to the internet

### Slow Blinking Blue ●●

- Ready to sync and pair with a camera
- Connecting with a camera

### Fast Blinking Blue ●●●●

- SmartHub has successfully paired with a camera

### Solid Amber ■

- An error has occurred or something is wrong with the connection

### Slow Blinking Amber ●●

- SmartHub cannot be found, is out of range, or some other connection error has occurred

### Alternating Blue and Amber ●●●●

- A firmware update or reset is in progress



# Arlo Device Compatibility



- The Ultra SmartHub currently supports the following wireless cameras:
  - Arlo **Wire-Free**
  - Arlo **Pro**
  - Arlo **Pro 2**
  - Arlo **Pro 3**
  - Arlo **Ultra**
- Arlo Audio Doorbell is **compatible** with the Ultra SmartHub
- Cross-triggering with Arlo Security Lights is **supported**
- The Ultra Camera is **NOT compatible** with older generation Arlo **Base Stations** (VMB4000, VMB4500, VMB3000, VMB4500)
- Customers will need to replace their existing base station with a **SmartHub** (VMB5000 or VMB4540) in order to use Ultra cameras



# Arlo Ultra Onboarding



- Pre-pairing and sync button location:
  - Ultra Camera kits are “Pre-Paired”
    - Cameras sold with an Ultra SmartHub in a kit are already linked and do **not** require the user to press the SYNC button
    - Follow the mobile app instructions for onboarding
  - Ultra Cameras will automatically sync to the SmartHub after power up
    - There is no need to press the SYNC button on the camera or the SmartHub
    - When the camera is selected during onboarding from the user interface, the system will discover the camera
    - Continue to select and name all new cameras that are discovered
    - The best approach is to power the cameras on **one by one**, but it will also work the same to power all new cameras at the same time



# Arlo Ultra Onboarding



- If the system cannot find the camera, the user interface will instruct to press the SYNC button
  - The SYNC button is located inside the camera housing
  - **Remove the camera from the case** in order to press the small SYNC button
- The Add-On Ultra Camera (VMC5040) **requires the user to press the SYNC button on both the camera and the SmartHub**
  - This is because an Add-On camera is a standalone product **not pre-paired** to an existing SmartHub like the camera kits
- If the SmartHub is **factory reset**, a resync of the cameras **using the SYNC button** is required



- If the SmartHub is offline:
  - ✓ 1. Check the **Ethernet cable**.
    - Use the Ethernet cable that came with the Arlo system.
    - Make sure the Ethernet cable is securely connected to the SmartHub and router.
  - ✓ 2. Check the **Power adapter**.
    - Make sure the power adapter is securely connected to the back of the SmartHub and plugged into an outlet.
  - ✓ 3. Check the **Internet connection**.
    - Try to connect to the Internet from another device that is connected directly to the router.
    - Use an Ethernet-connected device, not a device that is connected using WiFi.
      - Turn WiFi off on the device to ensure that the device is connecting using the Ethernet cable.
      - Attempt to browse the Internet from this device.
        - If the Internet is not available from the device, restore the router's connection to the Internet.
        - If the Internet from the device works, continue troubleshooting.
  - ✓ 4. **Power cycle** the SmartHub.
    - Unplug the power adapter from the outlet, wait two minutes, and reconnect the power adapter to the outlet.
    - The SmartHub takes one to two minutes to restart.
      - When the LED is **solid blue**, the SmartHub is connected to the Internet.
      - If the LED is **amber**, continue troubleshooting.

- Continued...

- ✓ 5. Check the router **DHCP settings** and **client list**.
  - Ensure that DHCP is enabled and that router's DHCP client list supplied an IP address to the SmartHub.
  - If it did, the SmartHub appears in the client list.
- ✓ 6. Check the router **security settings** and **firmware**.
  - Temporarily lower the security settings on the router or temporarily place the base station in the DMZ to rule out any firewall restrictions.
  - If these changes are made, power cycle the SmartHub as described in Step 4.
- ✓ 7. Check to make sure that **ports 443 and 80** are open on the router.
- ✓ 8. **Factory reset** the SmartHub.

# Ultra SmartHub Factory Reset



Performing a factory reset returns the SmartHub to the default settings.

## To reset the SmartHub:

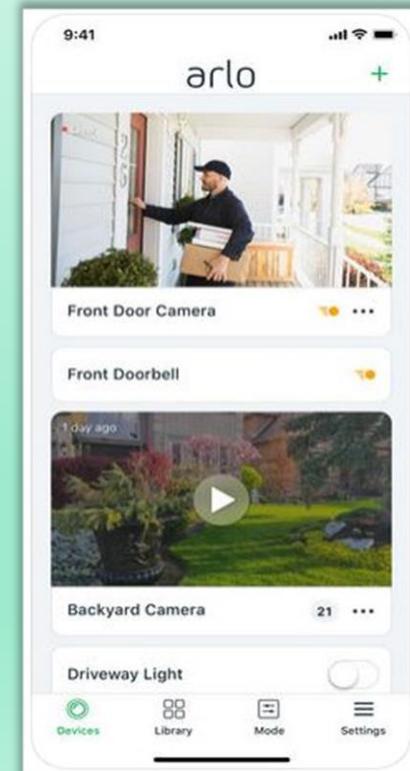
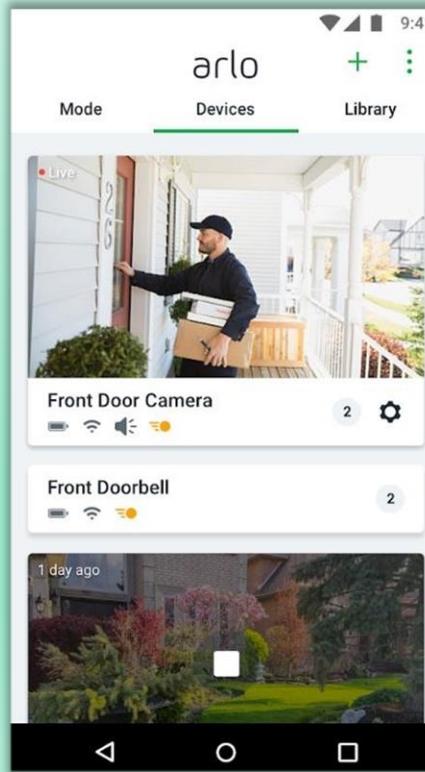
- Use a straightened paper clip to **press and hold the Reset button** on the back of the SmartHub for about **10 seconds**.
  - When the SmartHub reset completes, the LEDs on the front of the SmartHub **blink amber**.
  - When the LEDs stop blinking amber, the SmartHub **reboots**.
  - The SmartHub is **removed** from the Arlo account.



# Arlo Clients



- Customers should be encouraged to use the mobile iOS and Android apps
  - Use of the Web user interface should be discouraged
  - Use of iOS and Android is preferred when onboarding new systems
  - The Web UI will instruct customers to use mobile apps, but still allows the user to click through and proceed with the use of the Web version
- iOS and Android apps have the latest and best UX 3.0 design



# Tips for Optimal WiFi Performance



Place the Ultra camera in a location with a good WiFi signal to the SmartHub.

The distance between WiFi devices can affect the WiFi signal:

## Maximum recommended distance.

- Place the camera a maximum of **300 feet** (90 meters) from the SmartHub.
- The maximum line-of-sight range of 300 feet is reduced by each wall, ceiling, or other major obstruction between the camera and SmartHub.
  - For best performance, try not to exceed an Ultra camera distance of 150 feet from the SmartHub.

## Minimum recommended distance.

- To reduce WiFi interference, place the SmartHub **6 feet** (1.8 meters) away from the WiFi router.
- Place the cameras **10 feet** (3 meters) away from the SmartHub, and allow at least **6½ feet** (2 meters) between cameras.

The following materials can reduce WiFi signal strength if they are located between WiFi devices such as the SmartHub and Arlo cameras:

- Unusually thick walls and ceilings
- Brick, concrete, stone, and ceramic
- Glass, especially mirrors
- Metal
- Large quantities of water, such as the water in a fish tank or water heater

Arlo Ultra uses 4K videos in three different ways:

- **Local Live Streaming, Motion Cloud Recording, and Recording to a MicroSD card**



## Local Live Streaming

- Live stream in 4K on Arlo Ultra if the Arlo app and Arlo SmartHub are on the **same local network**.
- If **Local 4K Live Streaming** is enabled in the Arlo Ultra **Video Settings**, 4K live video automatically streams when the play button is tapped in the Devices tab of the Arlo app or website.

## Motion Cloud Recording

- A **Premium Video Recording Add-On** subscription is required to activate 4K motion cloud recording.
- Arlo Ultra can record in 4K when it detects motion or sound.
- The 4K recording is sent to the cloud where it can be viewed in the Library of the Arlo app.
- If not subscribed to the **Premium Video plan**, the best quality video Arlo Ultra can **record to the cloud** is **1080p**.

## Recording to a MicroSD Card

- Record 4K videos from Arlo Ultra to a microSD card by inserting a **microSD card into the Arlo SmartHub with SD Card Recording and Best Local Recording** enabled in the Storage Settings.
- To view microSD card recordings, remove the microSD card from the Arlo SmartHub and watch them on a device with a microSD card reader.

- Arlo Ultra outputs 4K (3840 x 2160) resolution at 16 x 9 aspect ratio
- HEVC (H.265) compression is used for 4K video
  - H.264 is used for 1080p
  - HEVC playback isn't fully adopted by all clients
  - The Arlo app will be able detect when it can't play 4K content and will display an error message
- 4K HEVC mobile playback requires:
  - Apple clients: iOS 11 or higher on iPhone 7 and iPad Gen6 or greater
  - Android clients: Android 5 or higher
    - The Android player will do its best to playback on all platforms, but video could be choppy at times
    - For best HEVC playback, use a device that is new within the last 2 years or so
- 4K HEVC Web client / browser playback requires:
  - Windows: IE11 or Microsoft Edge
  - Mac: macOS High Sierra, Safari 11 or higher
  - For the most up to date support, see <https://caniuse.com/#feat=hevc>
- The VLC standalone client will also play downloaded 4K video



# 4K Video



- Customers get 4K video recording to the SmartHub SD card for free
- Local live streaming on a local network is also free
  - **Customers must pay for the 4K service plan to record 4K in the cloud (Premium Video Plan)**
  - There are extra bandwidth and storage requirements for 4K which take up a lot of space
- CVR mode will only operate at **1080p** resolution (separate plan)
- Each 4K stream to the Arlo cloud is approximately 2 Mbps, so the customer must have sufficient upstream internet bandwidth to handle this
  - **Arlo recommends an average upload bandwidth speed of 4 Mbps.**

	4K	1080P	Notes
SD Card Video	Yes	Yes	
Local Live Stream	Yes	Yes	
Remote Live Stream	No	Yes	
Library Video	Yes (paid)	Yes	Premium Video Recording Add-On required for 4K
CVR	No	Yes (paid)	
Smart Zoom	N/A	Yes	The resulting video is 1080p

- To reduce connectivity issues when Live Streaming 4K on multiple cameras
  - Ensure mobile devices are connected to a home router through the 5 GHz band.
  - Make sure the average bandwidth speed is at least **4 Mbps**.
    - To check the Internet speed, visit [www.speedtest.net](http://www.speedtest.net).
    - The result of the Internet speed test might change, depending on varying amounts of traffic.
    - For accurate results, run the speed test multiple times.
- If connectivity issues are still experienced after checking the WiFi connection and Internet speed, perform the following tasks in order until the connection is back to normal:
  1. Change the power management settings to **Optimized** on each camera (one at a time) and check for improvement.
  2. Change the power management settings to **Best Battery Life** on each camera (one at a time) and check for improvement.
  3. Turn **off** Best Local Recording in the Storage Settings and check for improvement.
  4. Turn **off** Local 4K Live Streaming in the Video Settings as a last result.



- **Are there any limitations of the free 1-year Premier plan?**
  - No it has the same features as our Arlo Smart Premier plan that any customer can subscribe to.
  - 4K recording requires an extra plan per camera called Premium Video Recording.
- **Is the 1-year free Smart Premier Plan only good for initial registration?**
  - Scenario: A customer installed the Ultra System and the 1-year free Premier Plan has been activated for their account. After one month they decided to return Ultra Kit.
  - A second customer bought the returned Ultra Kit. Will be the 1-year free Smart Premier plan activate on their account as well? No, the plan only be activated once, just like a software license.
  - What is the process? Escalation to CCT for credit/ refund?
  - Customers don't qualify for a 1 year plan if the original owner already activated the plan.
    - If the original owner already has a service plan and the 1 year plan doesn't activate for their account, they can contact support and a credit will be issued for the value of the plan.
- **Is there any limit on cloud storage when subscribing to Premium Video Recording (PVR)?**
  - PVR enables higher quality recording, but does not define the retention of video clips
  - The main service plan for the camera will determine this, such as 30 days with Premier or 60 days with Elite

- For additional information on Arlo Ultra, see the following **Knowledge Base** articles:
  - Arlo Ultra **FAQ**
  - What are the **features** and **specifications** of the Arlo Ultra camera?
  - What is the difference between each Arlo **SmartHub** and base station?
  - How do I mount my Arlo Ultra or Pro 3 camera using the **magnetic wall mount**?
  - What is the **magnetic charger** that came with my Arlo Ultra or Pro 3 camera?
  - How do I **change the battery** in my Arlo Ultra or Arlo Pro 3 camera?
  - What are the available **Arlo subscription plans** and how much cloud recording is available?
  - How does my Arlo Ultra camera use **4K**?
  - How do I use **HDR** with my Arlo camera?
  - How does the **spotlight** on my Arlo camera work?
  - What is **Auto Zoom and Tracking** and how do I use it?
  - How do I create **activity zones** with my Arlo Ultra camera?
  - Is Arlo Ultra **backwards compatible** with my existing Arlo system?
  - My Arlo **SmartHub** or base station is **offline**; how can I troubleshoot it?
  - Why is the **live stream** from my Arlo Ultra camera green, purple, or gray?
  - Arlo **Firmware Release Notes** (INTERNAL)
  - Arlo Ultra camera **battery** issues (INTERNAL)
  - Arlo Ultra **FAQs** (INTERNAL)
  - Arlo Ultra **Troubleshooting** (INTERNAL)
  - Unable to obtain Ultra Premier Bundle Call Handler (INTERNAL)

END



Ultra