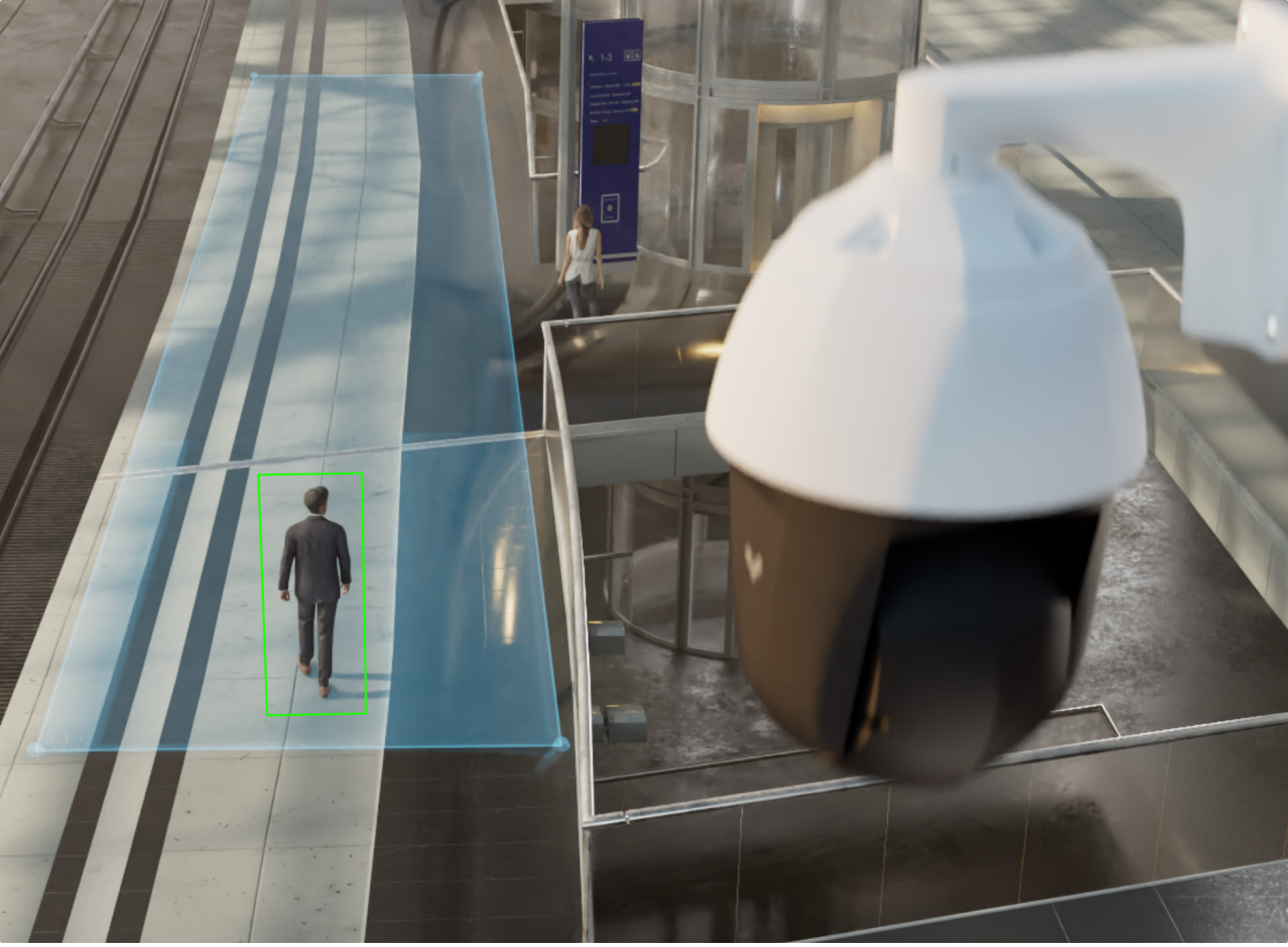


Verkada

User Guide for Sentry Mode

Overview

Sentry Mode is a new feature available for all CP52-E Pan-Tilt-Zoom (PTZ) cameras. With Sentry Mode, the PTZ becomes your vigilant eye, providing the benefits of live monitoring when an operator is not available.

When Sentry Mode is activated, the PTZ camera automatically detects people that enter its field of view. Once a person is detected, the camera zooms in to capture high resolution footage of the individual and follows them for approximately 15 seconds before zooming out to regain full context of the scene. Sentry Mode can be enabled 24/7 or follow a set schedule.

Sentry Mode is part of our People Analytics suite of computer vision technology. Similar to other People Analytics features, the accuracy of Sentry Mode is highly dependent on the proper installation of the camera, people density in the scene, and the visibility and distance of the individuals that enter the camera's field of view.

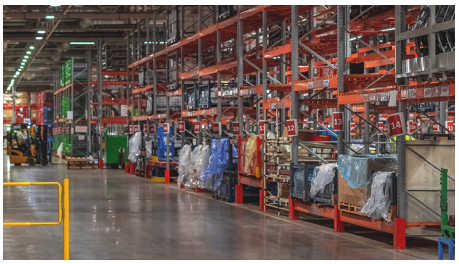
This user guide provides an overview of:

- Key use cases
- Setup and user experience
- Factors affecting accuracy
- Expected behaviors for Sentry Mode
- How to install the PTZ to maximize accuracy

Use cases

Sentry Mode allows organizations to effectively monitor vast indoor and outdoor spaces when a live operator is not available. By autopiloting the PTZ, Sentry Mode helps to ensure that detailed attributes of people found within the area of detection are captured clearly. Equipped with close-up images of clothing and faces, organizations can then better conduct investigations and leverage People Analytics features like attribute and face search across their entire camera fleet.

Sentry Mode works best in areas with low people density and a clear and unobstructed view. For areas with high people density, we recommend scheduling Sentry Mode to activate during periods of decreased foot traffic such as after hours.



Storage lots, warehouses and manufacturing facilities after hours

Safeguard valuable assets, such as inventory and equipment, during hours when people should not be present. Detect unauthorized access, track the movement of individuals, and zoom in to gather identifying details when a live operator is not available.

Parking lots, campuses and parks with low foot traffic

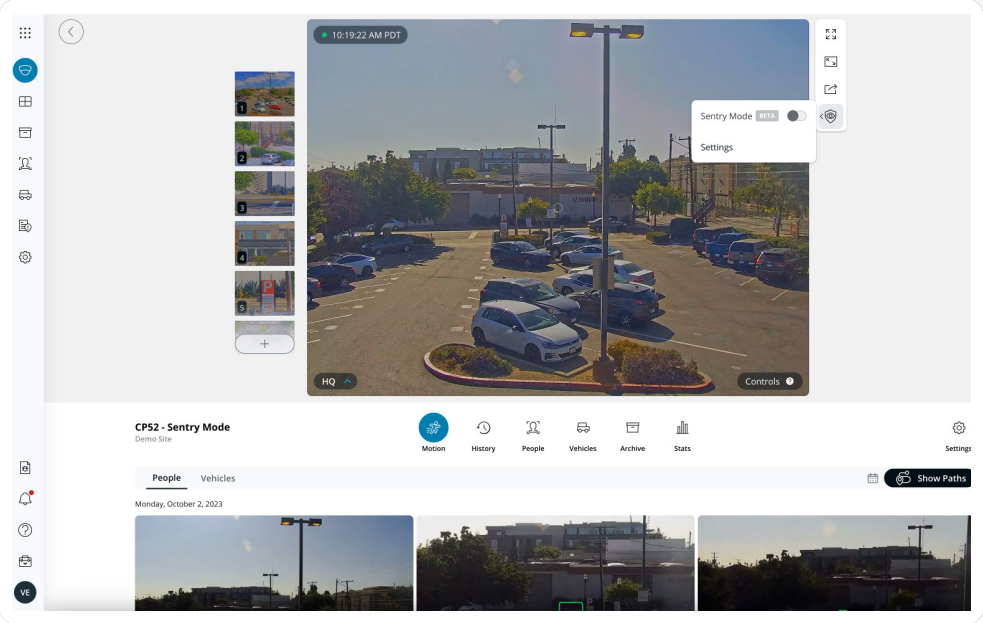
Effectively monitor outdoor spaces with low foot traffic or at night for suspicious activities. Capture high-quality images of individuals conducting illegal behavior like catalytic converter theft in auto dealerships, parking lots and school campuses.

Stadiums and venues when not in use

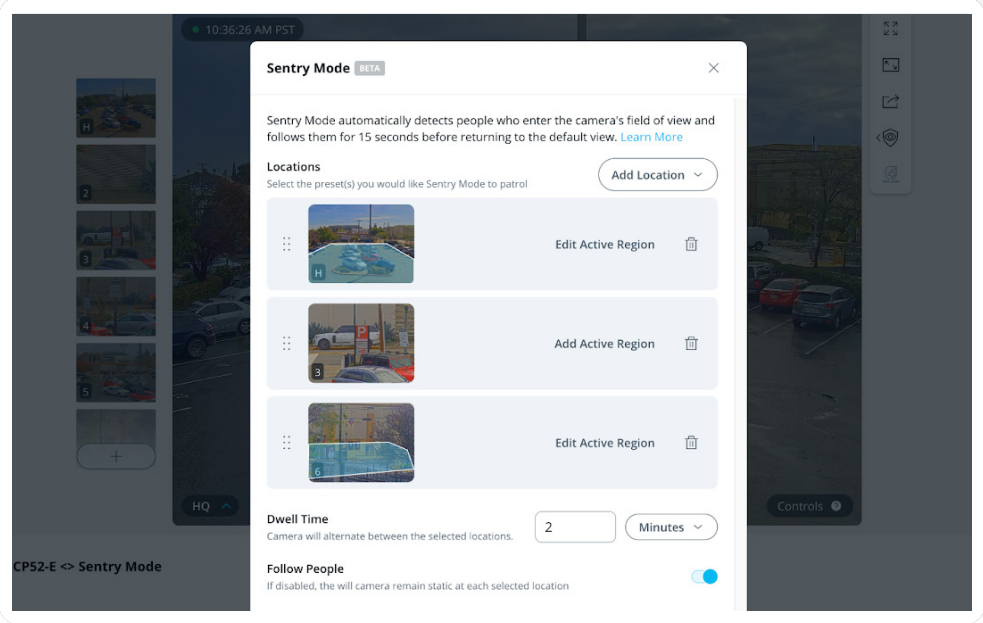
Continue monitoring stadiums and venues even outside of event hours. Automatically scan the space for suspicious activities such as unauthorized access, loitering and vandalism during idle periods.

Setup and user experience

Site admin permissions are required to set up Sentry Mode on a PTZ camera. Upon navigating to a PTZ camera in Command, users can find the Sentry Mode icon in the toolbar to the right of the video feed.

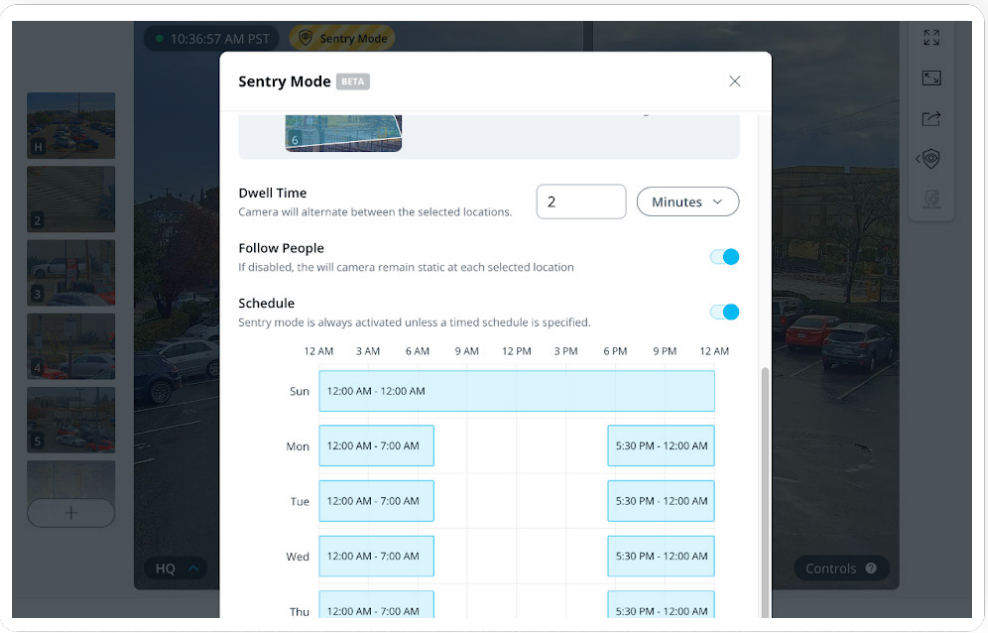


To enable Sentry Mode, users must select a field of view for the camera to monitor. The list of options correspond to the preset views on that PTZ camera. Users can select up to 25 preset views for Sentry Mode to patrol. When multiple views are selected, users may also configure how long Sentry Mode dwells on each scene, which can range from 30 seconds to 24 hours.



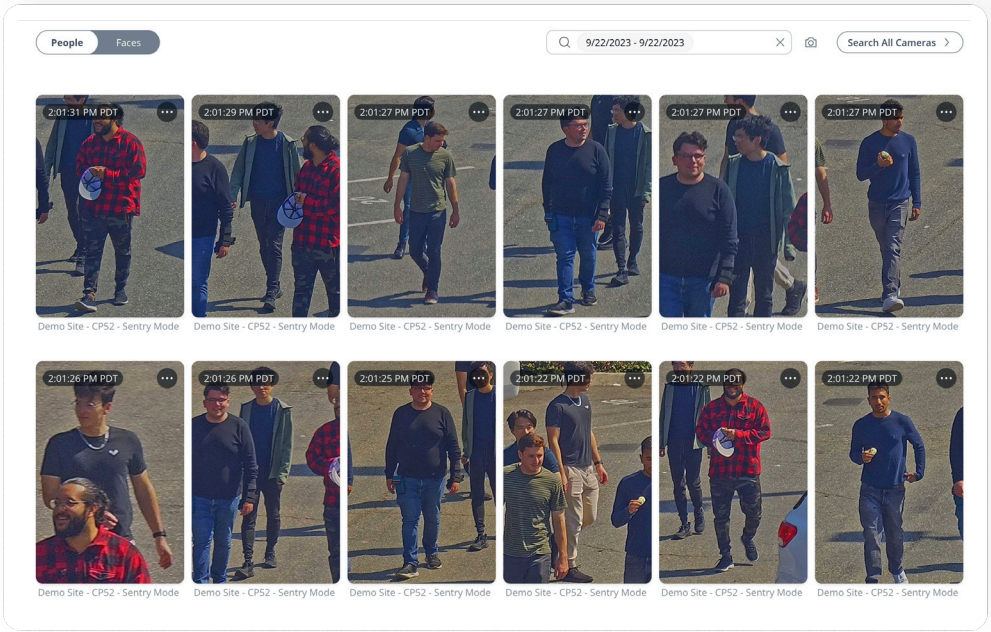
After selecting a preset location, users may also define an active region for Sentry Mode by drawing a polygon in the field of view. Once activated, Sentry Mode will only zoom in on people detected inside that region of the scene.

Users can also configure a schedule for Sentry Mode. This is useful for monitoring areas during specific times such as nights and weekends. If the scheduling feature is disabled, Sentry Mode will be on 24/7 once activated.



To activate Sentry Mode, simply click **"Save and Activate."** The PTZ will start to automatically capture high-resolution imagery of people within the area of detection during the scheduled times.

Users will be able to view high-quality, close-up images of people captured during Sentry Mode under the **"People"** and **"Faces"** tabs.



Factors affecting accuracy

Sentry Mode relies on our people detection algorithm to accurately zoom in on people who enter the camera's field of view. This algorithm can be affected by environmental factors, causing Sentry Mode to occasionally miss individuals. There are four main variables that might inhibit Sentry Mode's accuracy and general performance.

1. **Obstructions.** As a person moves through the camera's field of view, they may be temporarily or permanently hidden from the PTZ's line of sight by another object. This can cause issues for our tracking algorithms when it comes to accurately following individuals throughout the entirety of the scene. For optimal results, we recommend using Sentry Mode in areas with minimal obstructions.

2. **Limited detection window.** When configuring Sentry Mode, we recommend choosing a wide field of view that captures the entire scene you are looking to monitor. This is important as individuals need to be visible for roughly 5 seconds for Sentry Mode to accurately follow their path. People who are running across a narrow field of view and/or appear for less than 5 seconds may be missed by the camera's tracking algorithm.

3. **High foot traffic.** In areas with high people density, such as airports, stadiums and concert venues, Sentry Mode may miss individuals in the scene because the camera is already tracking another person or group of people. Although we have implemented camera movement constraints in scenes with large crowds (10+ people) as well as a zoom timeout mechanism, the camera may still miss certain people present on the edge of the scene.

4. **Distance to camera.** Sentry Mode's accuracy may decrease when individuals are more than 150 feet (50 meters) away from the camera.

For ideal coverage when using Sentry Mode, we recommend pairing the PTZ with a fixed camera (e.g. Dome, Bullet or Fisheye) that monitors the entire scene. This helps to maintain general context of the overall area when the CP52-E is zooming in on specific individuals.

Expected behaviors

Camera boot-up. Upon initial boot-up of the CP52-E PTZ, Sentry Mode may take a couple minutes before detecting people.

Obstructions. When objects obstruct the PTZ's line of sight to a detected person that is being followed, the camera will zoom out slightly and pause temporarily to regain tracking of the subject. If the subject is not detected within two seconds, the camera will revert back to Sentry Mode's home position.

Large groups. When following a group of people, the PTZ will choose the optimal zoom level to keep every person clearly visible inside the frame. If more than 10 people are detected within the camera's field of view, the PTZ will remain in Sentry Mode's home position to retain full context of the scene.

Installation guidance

Install the camera at a high vantage point

For optimal results, the PTZ camera should be installed at least 25 feet (8 meters) above the ground. The higher vantage point allows the camera to have as wide of a view as possible and fully utilize the 28x optical zoom.

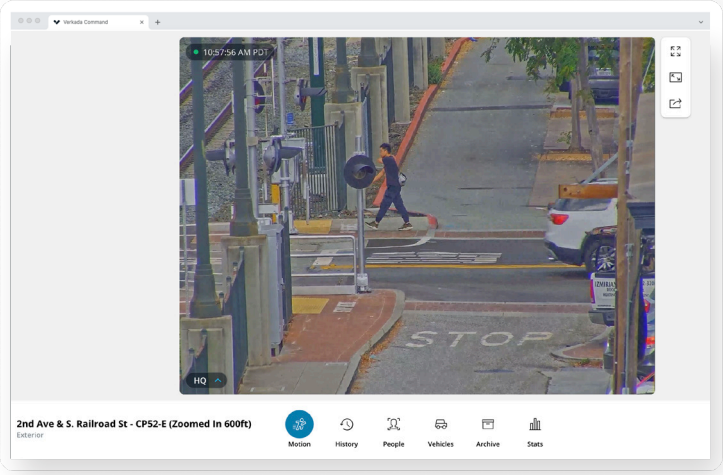
Position the camera within 150 feet of potential subjects

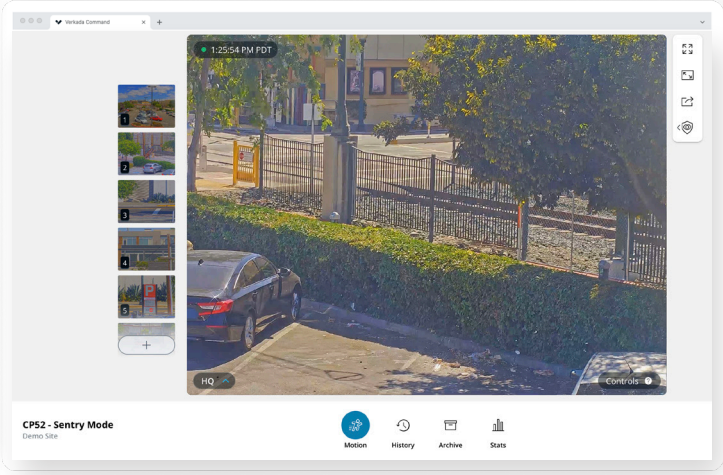
The people detection algorithm is most accurate when individuals are no more than 150 feet (50 meters) away from the camera. While the camera may capture individuals at greater distances, Sentry Mode's accuracy will decrease.

Minimize obstructions

When setting up Sentry Mode, it is important to choose an unobstructed field of view in an area that minimizes interference from objects such as trees or fencing. Obstructions may cause the camera to lose track of detected people in the scene.

Examples of bad installations





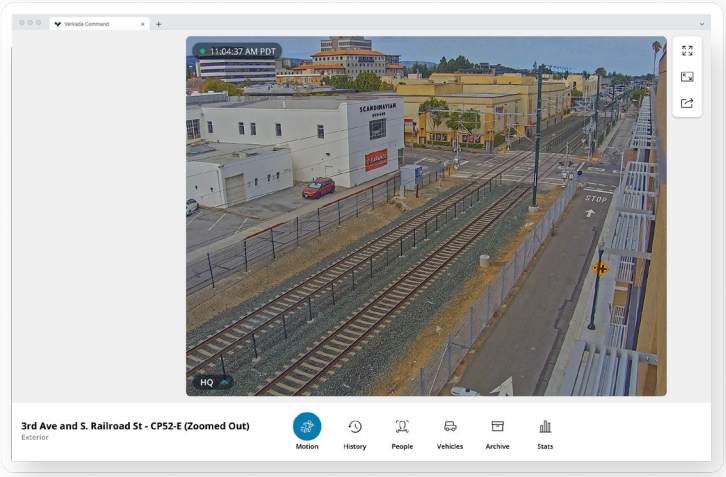
Narrow field of view

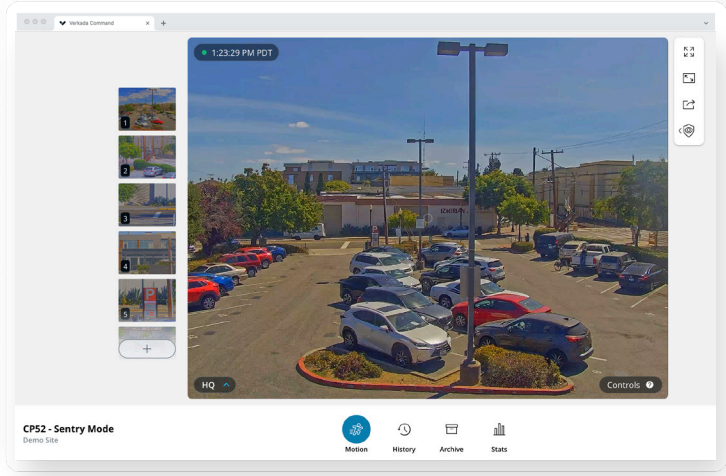
People must be present for at least 5 seconds before Sentry Mode can accurately detect and zoom in on them. In this example, the camera may not be able to follow people who are walking across the frame.

High number of obstructions

Large objects like fences and trees may prevent Sentry Mode from accurately following individuals who are temporarily or permanently hidden from the camera's line of sight.

Examples of good installations





Unobstructed view of the entire scene

The street alongside the railroad tracks is unobstructed and within the 150 feet (50 meter) range for accurate people detection.

Complete field of view

Using the widest field of view possible, the CP52-E can effectively monitor the parking lot and accurately zoom in on people walking through the unobstructed sections of the area.