Miovision SmartView 360, SmartView Approach, and SmartView Approach 2 Installation Guide

Feb. 2026

Introduction

This document is divided into two sections with similar structures: the first for the spherical, at-intersection Miovision SmartView 360, and the second for the approach-based Miovision SmartView Approach, which is designed for Advance Detection. The two cameras can be set up and installed in parallel; this document simply splits the instructions.

An installed Miovision Core or Core DCM is needed for this guide. If you are simply using a Miovision Core for video streaming and do not have a Core DCM, then you don't need to configure Detection or Counts. This document assumes a Core DCM is used. If you are using a SmartLink with or without a SmartSense, the instructions are largely similar. If you have a SmartSense, make sure to plug the cameras and any PoE Switch for additional cameras directly into it, rather than into the SmartLink.

Miovision SmartView 360

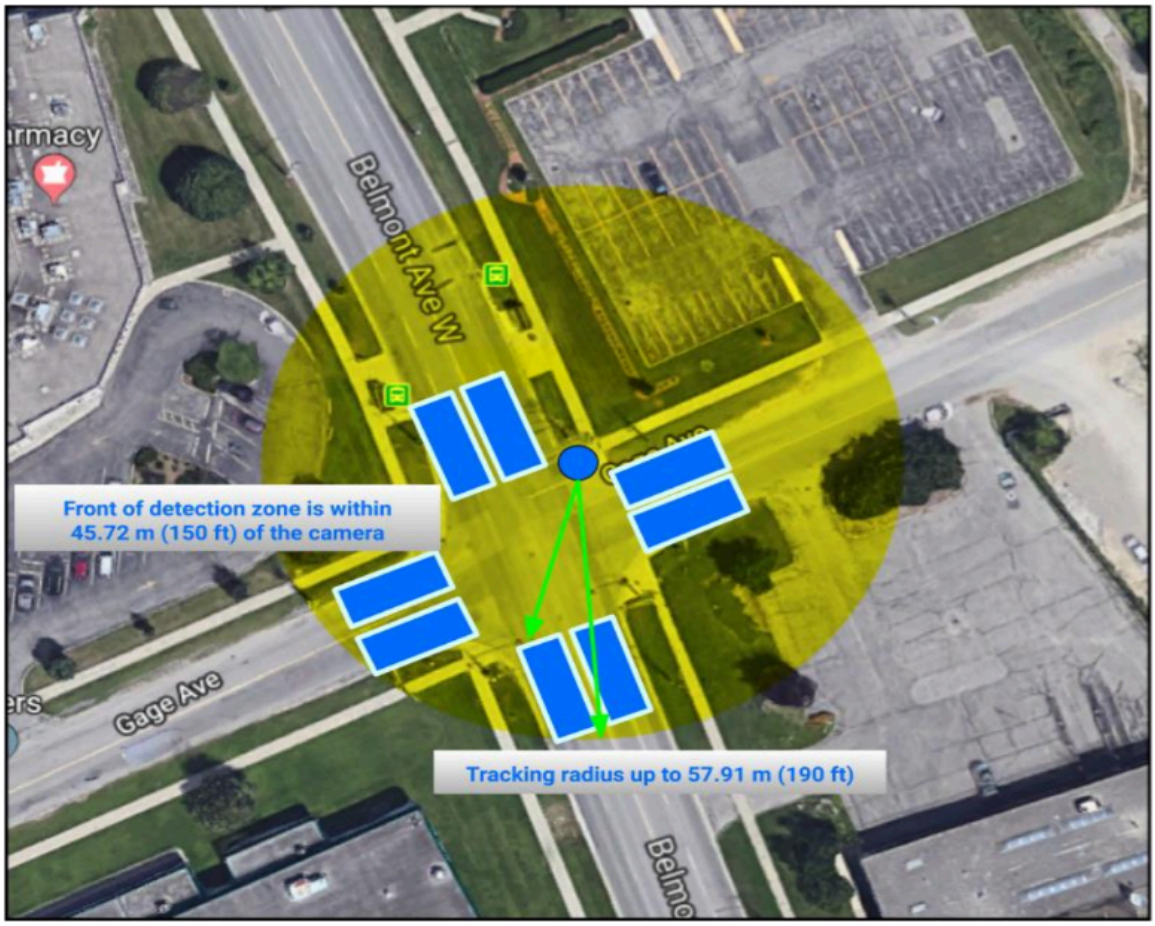
Planning your SmartView 360 installation

Determining the number of cameras to install

Detection supports single and dual-camera installations with the SmartView 360 camera. Detection is optimized by installing the camera as high as possible.

Single-camera installations

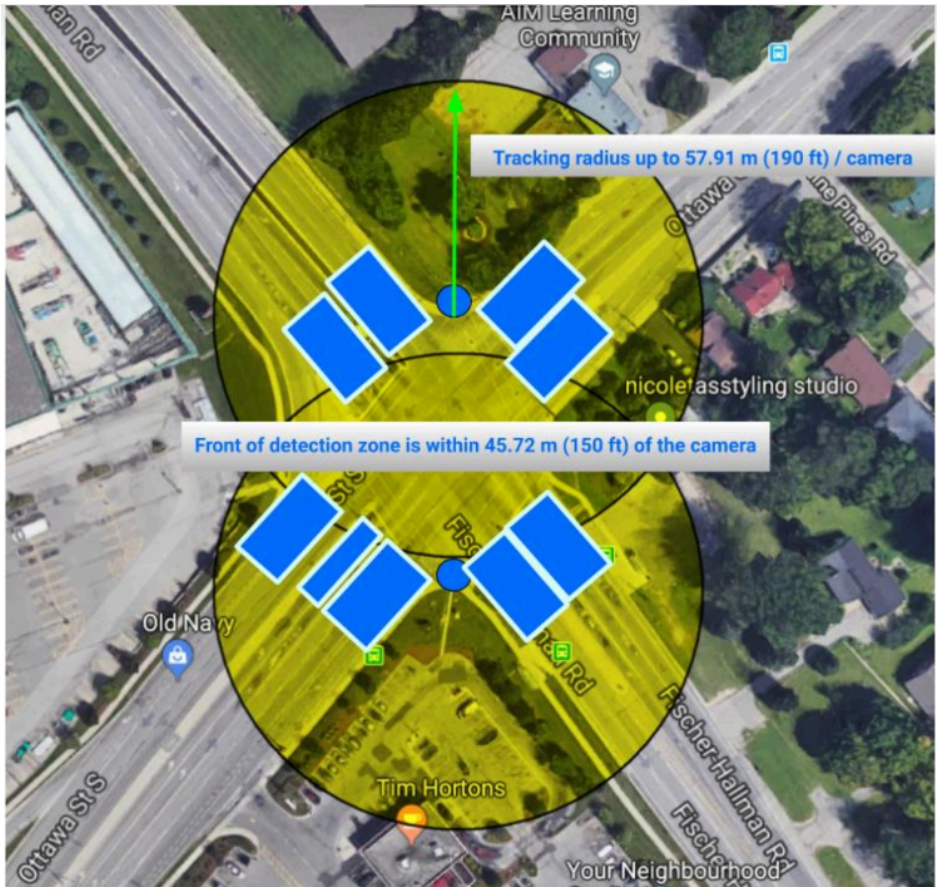
A single camera is usually sufficient for smaller intersections, except for those with limited mounting options that do not permit you to install the camera to a minimum height of 9.14 m (30 ft), or those where an object occludes the camera’s field-of-view. In those scenarios, install a second camera to optimize detection and limit the potential for objects to obstruct vehicles or vehicles to obstruct one another.



Examples of obstructions

Dual-camera installations

Larger intersections require a second camera. See the table below for guidelines. Dual-camera installations can also improve pedestrian and bicycle data accuracy in Continuous Multimodal TMCs.



Camera height	Maximum distance from camera	
	To front of zone	To back of zone
8.5 m (28 ft)*	42.67 m (140 ft)	54.86 m (180 ft)
9.1 m (30 ft)	45.72 m (150 ft)	57.91 m (190 ft)
9.75 m (32 ft)	48.77 m (160 ft)	60.96 m (200 ft)

***Deploying the camera to less than 9.14 m (30 ft) increases the potential for vehicles to be obstructed by other vehicles.**

The camera may be deployed higher, and in *some* scenarios, may be able to see further than indicated in the table above. The above table shows heights and corresponding distance limits for consistent performance. If your intersection is particularly large, you may be better served by two cameras.

Deployment Guidelines

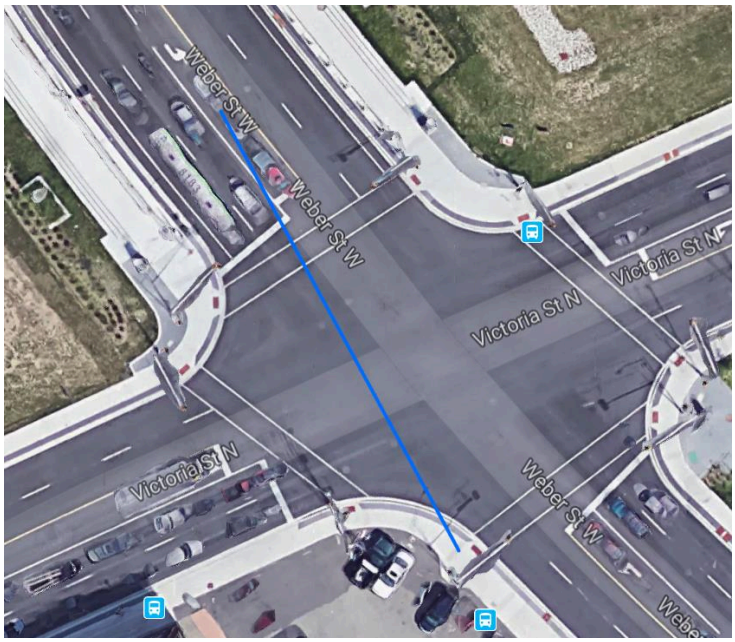
1. Determine which traffic pole you will use to mount the SmartView 360. This is typically the traffic pole nearest to your traffic cabinet, but could be a different traffic pole as long as it meets the following requirements:

- It must be the traffic pole nearest to the intersection.
- It must be a hollow traffic pole or mast arm with access to run cabling inside the pole. If you must mount SmartView 360 on a solid traffic pole, a weatherproof junction box is required.
- Signal heads, mast arms, signs, trees, or any other objects must not obstruct the line of sight from the camera.

2. Determine where on the traffic pole you will install the SmartView 360, including whether you will install it on a mast arm. The minimum recommended installation height is **9.14 m (30 ft)**. You must supply a pole extender to raise the mounting height if the planned pole is not tall enough.

3. Determine the size of your intersection by measuring from the base of the traffic pole where the camera will be installed to the most distant location where you want to detect objects.

- In Google satellite view, you can do this by right-clicking at the base of the pole where you want to install SmartView 360, clicking **Measure Distance**, and then clicking the most distant location where you want to detect objects. Make sure that you measure to the back of the detection zone, not to the corner of the intersection. As you consider different camera locations, you can drag the two points around to update the distance. For example, in this intersection, the most distant detection zone is displayed at the top of the image.



Camera Placement

Installation requirements table

Requirement	**Specification**
Camera Mounting Height	Recommended height: 9.14 m (30 ft) or higher. **Note:** if you are mounting on a mast arm, the mounting height might vary; however, you should make sure that there are no obstructions and that all movements of interest are in the camera's field of view. If existing poles are not tall enough, install a pole extender to raise the height.
Mounting Surface	Hollow traffic pole with access to run cabling and a coupler inside the pole. **Note**: Solid poles require a weatherproof junction box.
Camera Orientation	Pointed toward the center of the intersection, free of obstructions.
Ethernet Cable	**Cable**: Shielded Cat5e Ethernet Cable (with drain wire), outdoor rated with a temperature

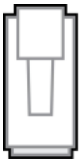
	range of -34°C to 74°C (-30°F to 165°F). Miovision recommends the Quabbin 5710 Ethernet cable or an equivalent. **Length:** The PoE port on Core DCM (or SmartSense) supports an Ethernet cable length up to 100m (328 ft). If a longer cable run is needed, a PoE injector will be required. **Note:** Cat6e cable could also be used, but the higher speed is not required for this application. **Slack:** At least 1 to 1.2 m (3 to 4 ft) drip loop at camera-end. **Termination**: Shielded RJ45.

Hardware Preparation

SmartView 360 Components

Pictured: SmartView 360 attached to Miovision's optional camera mount ("candy cane") with rubber gasket.
Inset: Miovision's Universal Hub in vertical orientation.

- SmartView 360 Camera Assembly
    - SmartView 360 camera in bell sub-assembly - with 1.5 inch NPT thread (female)
    - Rubber Camera Gasket
    - Teflon Thread Seal Tape
    - Silicone weatherproof tape
    - Torx T20 security bit
    - 3 x shielded RJ45 connectors with wire inserts



Optional:

- Universal SmartView 360 Mount ("Candy-cane style")
- Universal SmartView 360 Hub for vertical or horizontal installations
- Universal SmartView 360 Extension to add 6'/1.8m to camera height

Note: Mounts and Hubs from vendors other than Miovision can be used. The instructions below are for the Miovision components, though.

Components and Tools Not Included:

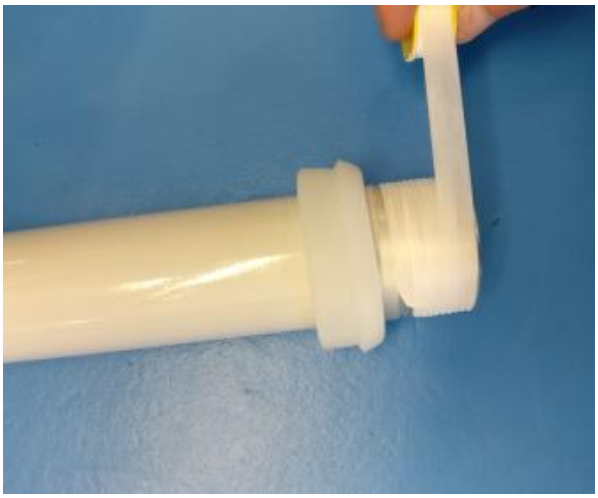
- Bucket Truck: Schedule a bucket truck with a minimum reaching height of 9.14 m (30 ft) (or height needed for install)
- Stainless steel banding - 19 mm (¾ in) band width recommended
- Banding tool
- RJ45 crimping tool (Miovision recommends Platinum Tools 100054C EZ-RJPRO HD crimp tool)
- Ethernet cable test unit
    - Possible devices include:
        - Klein VDV526-200
        - Sperry TT64202
- An Ethernet cable long enough to connect from the cabinet to the SmartView 360 camera, plus enough slack for a drip loop
- Sockets or wrenches - 9/16" and 3/4"
- Hex key: 5/16"

Mount the Camera Bell

1. Note the camera serial number that is indicated on the outside of the packaging. The serial number is required for warranty claims.

2. Install the rubber camera gasket onto the candy-cane mount. Fold the gasket back to allow the installation of the camera bell assembly. Apply thread seal tape to the camera mount threads.



3. Install the SmartView camera bell assembly and then rotate clockwise until snug.

4. Position the rubber camera gasket to cover the gap between the camera mount and the bell.

Available: SmartView 360 Extension 6ft (1.83m)

The 1.83 m (6ft) extension is intended to add height to the Universal Camera Mount, for example, if the mast arm is not high enough to reach the recommended height of 9.14 m (30 ft). It can be mounted to a vertical or horizontal pole using the Universal Hub.

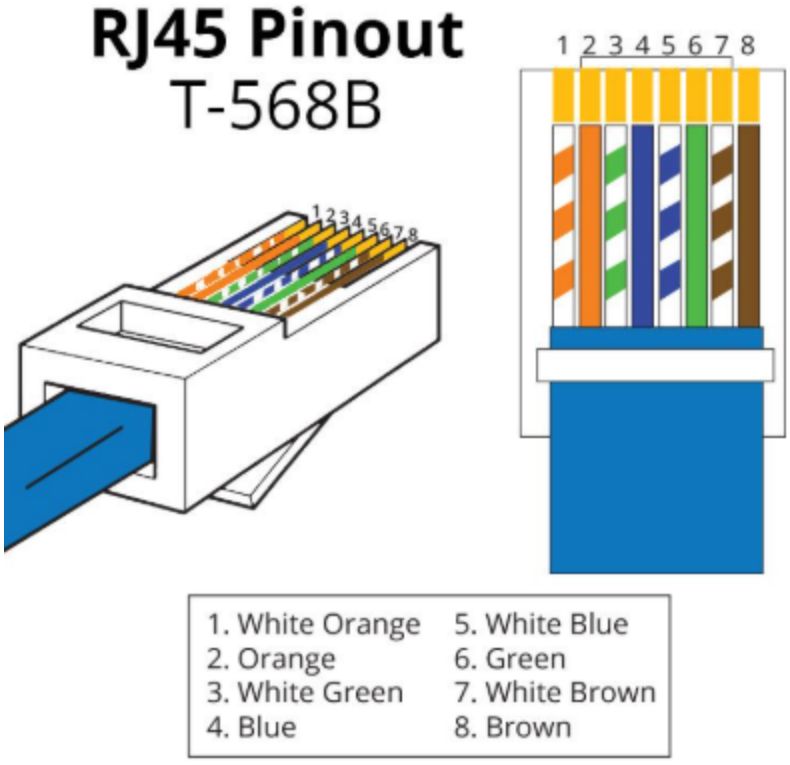
Connect the Ethernet cable to the camera

1. Loosen the camera set screw using the provided Torx T20 security bit.

2. To release the camera from the mounting plate, apply downward pressure on the camera housing and then rotate the camera housing counter-clockwise.

3. Before installing or crimping the RJ45 connector, position the coupler at one end of the Ethernet cable. Pull the Ethernet cable through the universal mount and bell before proceeding, and install the coupler and crimp on the camera/bell side.

4. Install/crimp the RJ45 connector per the TIA-568-B pinout. Ensure that the Ethernet cable drain wire is connected to the metal shield on the RJ45 connector. Test the cable run connections/shield.



5. Connect the RJ45 connector to the coupler on the camera module, then rotate the coupler clockwise to lock. When the coupler is closed correctly, the arrows on the coupler line up. Ensure the coupler remains dry during installation.


6. Tighten the end cap and then wrap the coupler with silicone weatherproof tape. Wrap the connection back and forth using an overlapping pattern.

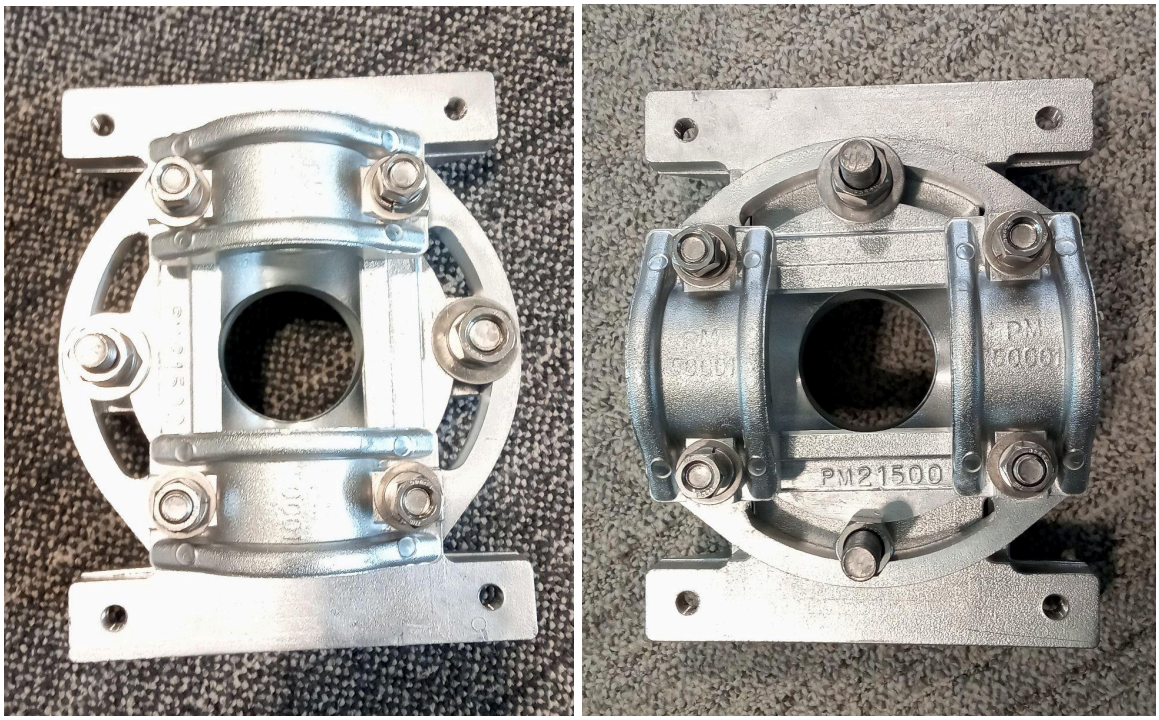


7. Feed the Ethernet cable back into the bell, and through the universal mount ("Candy cane"). Then align the screws on the back of the camera with the corresponding screws on the mount plate. Press down on the camera housing and twist clockwise to lock the camera into place. Make sure that the camera orientation matches the picture below.

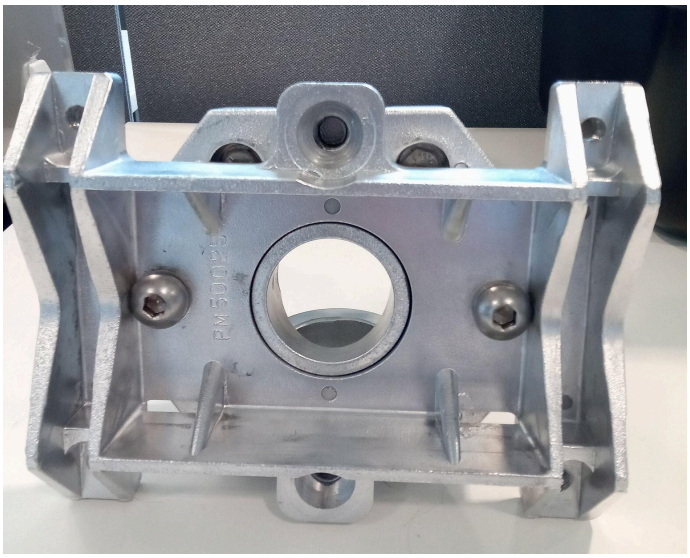
When holding the camera by the arm, the text logo appears upright. The tab on the side of the camera should move from Open to Lock. Using the Torx bit, tighten the set screw until it is snug.

Preparing the Camera Hub for mounting

1. The hub has two orientations, vertical and horizontal. Within each orientation, some rotation is available for precision. To rotate it to the correct angle for installation, loosen the (5/16" head, ¾" nut) two screws shown in the following diagram, rotate the camera arm, and then tighten the nuts.
    a. To change to a vertical orientation, remove the two large screws completely, rotate the hub, and reinstall them into the corresponding threaded holes in the base. (5/16" head, ¾" nut)



Universal hub pictured in vertical orientation (LEFT), and horizontal orientation (RIGHT).



Detail: View of universal hub backing plate with 8mm hex screws in horizontal orientation.

2. Use a 9/16" socket or wrench to tighten the four nuts securing the two collars on the hub around the base of the mount (the candy cane). The hub is secured with stainless steel

banding (¾" or 19 mm). The image below shows what the finished product should look like:

Finished assembly comprised of camera-bell sub-assembly, universal mount ("candy cane"), Ethernet cable (coupling is hidden), and universal hub. The hub pictured is in the vertical orientation.

Installation at the Site

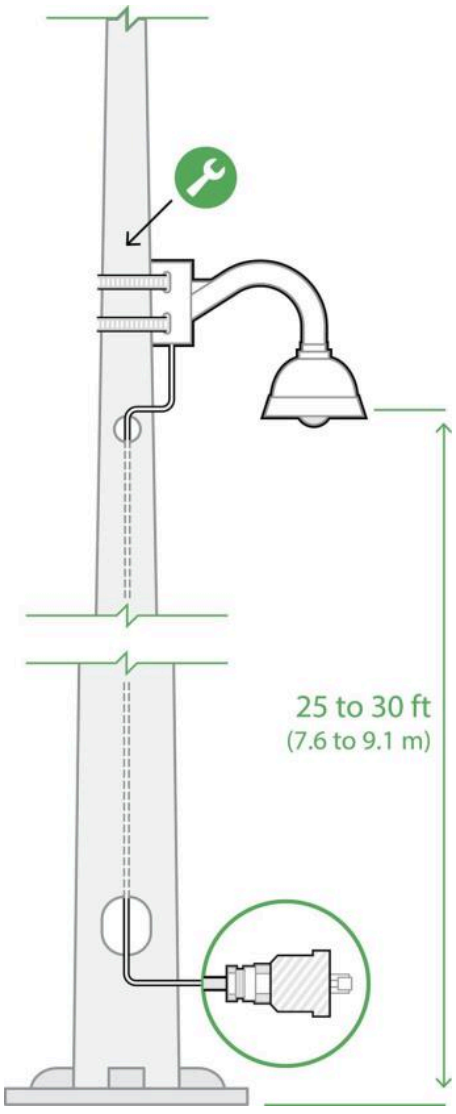
Safety recommendations

- Follow all of your agency's required safety procedures when parking and using a bucket truck during the camera installation.

- Do not install components if the conditions are unsafe, such as during adverse weather situations.
- Do not install components where overhead lines could potentially come into contact.
- If possible, inspect wires in the cabinet and traffic pole for any unsafe wear and replace them if necessary.

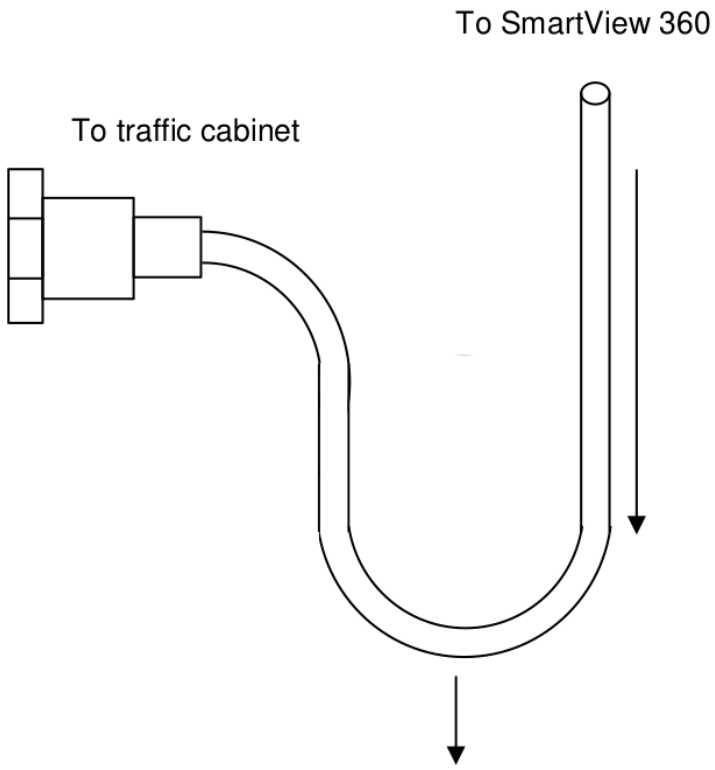
Mounting the Camera

1. In a bucket truck, gather:
    - SmartView 360 components (including camera assembly, couplers, and connectors).
    - 19 mm (3/4 in) stainless steel banding and a banding tool.
3. Raise the bucket to the height where you plan to install the SmartView 360.
4. If you are installing on a traffic pole using two lengths of stainless steel banding, mount the SmartView 360 to the traffic pole at a height of 9.14 m (30 ft) or higher.
5. Rotate the SmartView 360 so that it points toward the center of the intersection, free of visual obstructions.
6. After the SmartView 360 is in position, tighten the socket nuts with an 8 mm (5/16 in) socket wrench.



7. Run the shielded Ethernet cable through the hole in the traffic pole, leaving at least 1 to 1.2 m (3 to 4 ft) of slack to follow the proper drip loop procedure.

Note: You might need to remove a pole grommet temporarily to allow the Ethernet coupler to fit through.



Depiction of a drip loop. Rainwater may run down the cable from the camera at the right. The drip loop provides a natural and safe spot for water to drain.

8. At the traffic cabinet, cut the Ethernet cable to the appropriate length and then install and crimp the RJ45 connector. Make sure that the drain wire contacts the shielded connector housing.

In-Cabinet Installation

Follow the steps in the Miovision Core and Core DCM Hardware Installation Manual to install the Miovision Core or Miovision Core DCM.
https://miovision.my.salesforce.com/sfc/p/#50000000a2wf/a/OO000000yfpt/zEF3QEj8GNDJlyE_eo7pJW1I1p7Q3uxyvsDchzscM7g

Connect SmartView 360 to Miovision Core

1. In the traffic cabinet, connect the Ethernet cable to a PoE port on the Core DCM. If you are installing two SmartView 360 cameras, connect the second camera to another open PoE port.

Initialization

2. Turn the Core DCM on. If the Core DCM is already on, turn the Core DCM off and then turn it back on. This step is required to make sure that the correct camera settings are applied.

Test your installation

Confirm that the LEDs on Core DCM appear as follows:

- Heartbeat: flashing blue
- VPN: solid blue
- WAN: solid blue
- Cell: solid blue
- State: flashing (booting) or solid (booted) blue

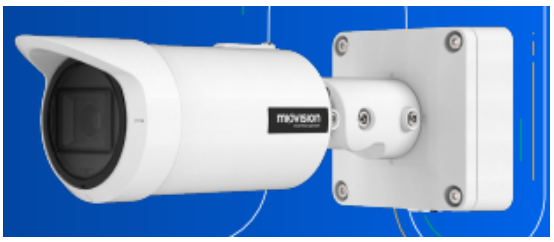
Verify Video

Once the camera is connected, you can add it to Miovision One to verify the video and ensure the camera is pointed in the appropriate direction.

1. The camera should show all approaches and the intersection center.
2. Look for apparent occlusions that could be mitigated by adjusting camera placement.

Miovision SmartView Approach and SmartView Approach 2

The following installation instructions apply to both the SmartView Approach and SmartView Approach 2 cameras, as they are very similar. Whenever there are differences, such as how to adjust the camera's direction, both sets of instructions will be provided. When clarity is required, the original SmartView Approach will be referred to as SmartView Approach 1 to distinguish it from SmartView Approach 2.



SmartView Approach 1

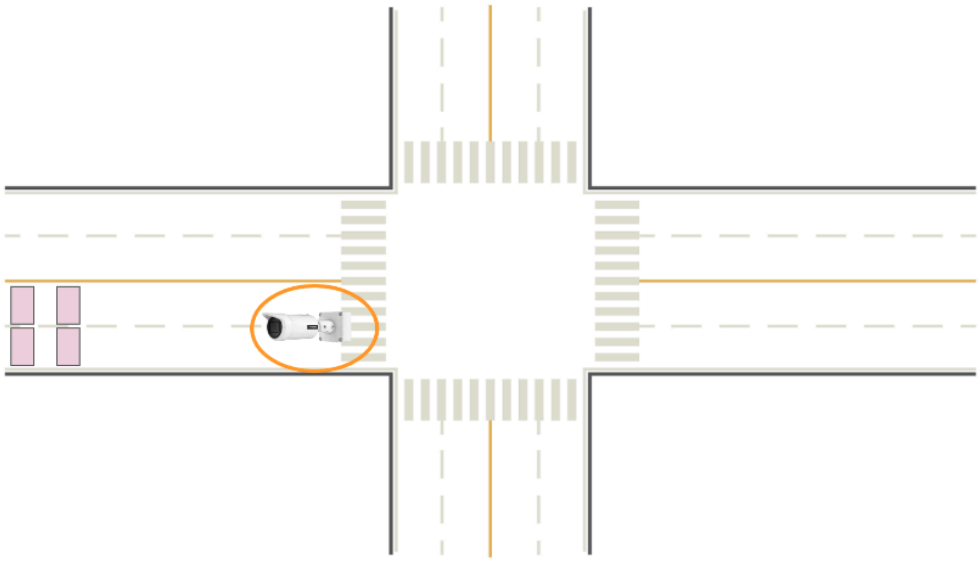
SmartView Approach 2

Planning your SmartView Approach installation

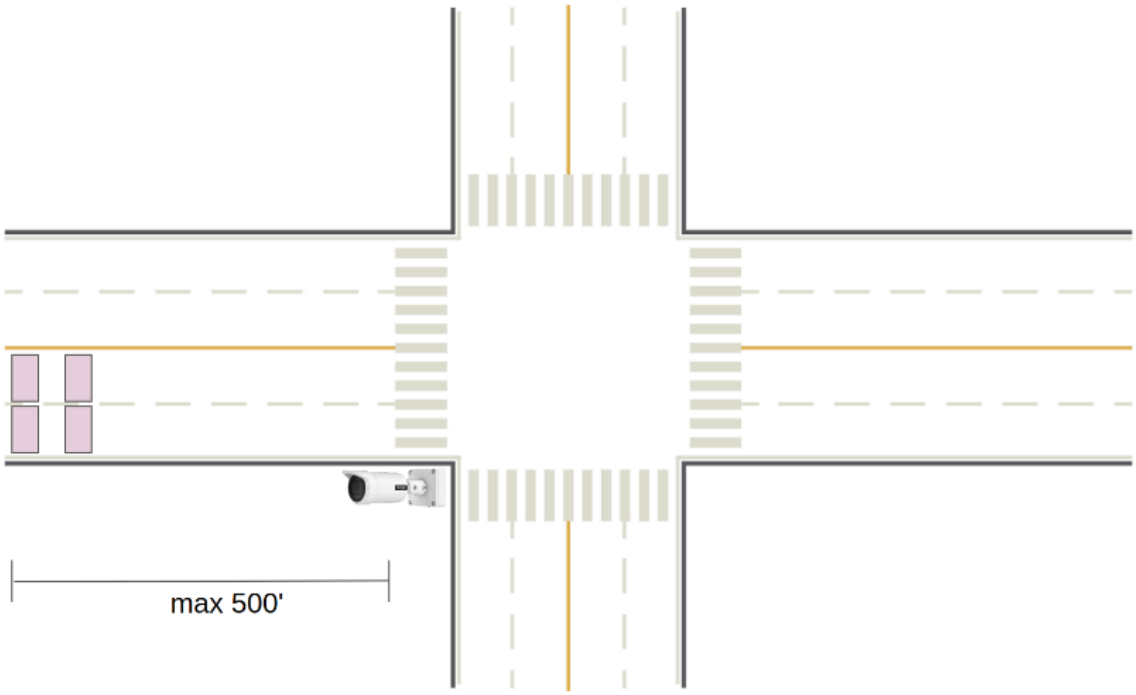
There are a few broad guidelines for placing the Miovision SmartView Approach camera.

1. The camera doesn't need to see the stop bar, so it can be mounted AT the stop bar for proximity to the Advance Detection zones. This also removes the opposite mast arm from view.
2. Presence and Pulse Detection zones from 200 to 500ft (60-150m) are supported.
3. Recommended height of installation is 30ft (9.14m). Higher installs are beneficial to minimize the effect of occlusions, but lower install heights are possible, particularly for closer zones.
4. Mounting at the side of the road is sufficient; the camera does not need to be centered directly in front of the detection zones.

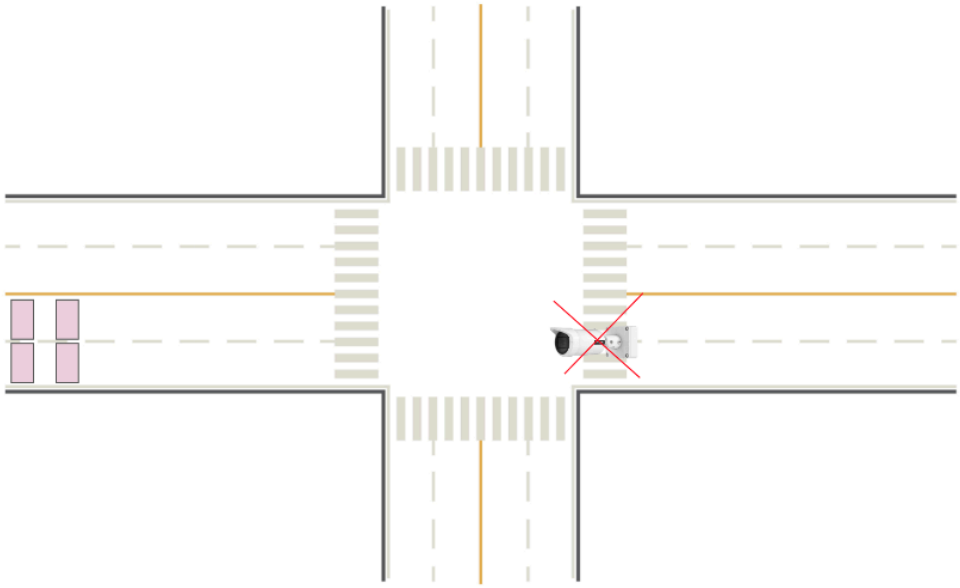
In this example, the camera is mounted adjacent to the stop bar at the southwest corner of the intersection.



If it is more convenient, the camera may also be installed at the median, or even the opposite corner (northwest). If the road is particularly wide, it's helpful to remember that the 500 ft/150m limit is the straight line distance from the camera to the furthest zone (rather than a distance measured simply along the side of the road).



What to Avoid



Do not deploy the camera at the opposite side of the intersection. This makes the distance to the zones unnecessarily large and increases the probability of occlusion.

Hardware Preparation

SmartView Approach Components

- Miovision SmartView Approach
- RJ45 waterproof connector coupler
- RJ45 connector (qty 3)
- Silicone weatherproof tape
- 3/16 inch / 5mm hex L-key
- T20 tamper-resistant ¼” screwdriver bit (SmartView Approach 2 only)

Required materials (not included) for SmartView Approach:

- Bucket Truck: Schedule a bucket truck with a minimum reaching height of 9.14 m (30 ft) (or higher if necessary)
- Stainless steel banding - 19 mm (¾ in) band width recommended, with crimping rings
- Banding tool

- RJ45 crimping tool (Miovision recommends Platinum Tools 100054C EZ-RJPRO HD crimp tool)
- Ethernet cable test unit
    - Possible devices include:
        - Klein VDV526-200
        - Sperry TT64202
- An Ethernet cable long enough to connect from the cabinet to the SmartView Approach camera, plus enough slack for a drip loop.

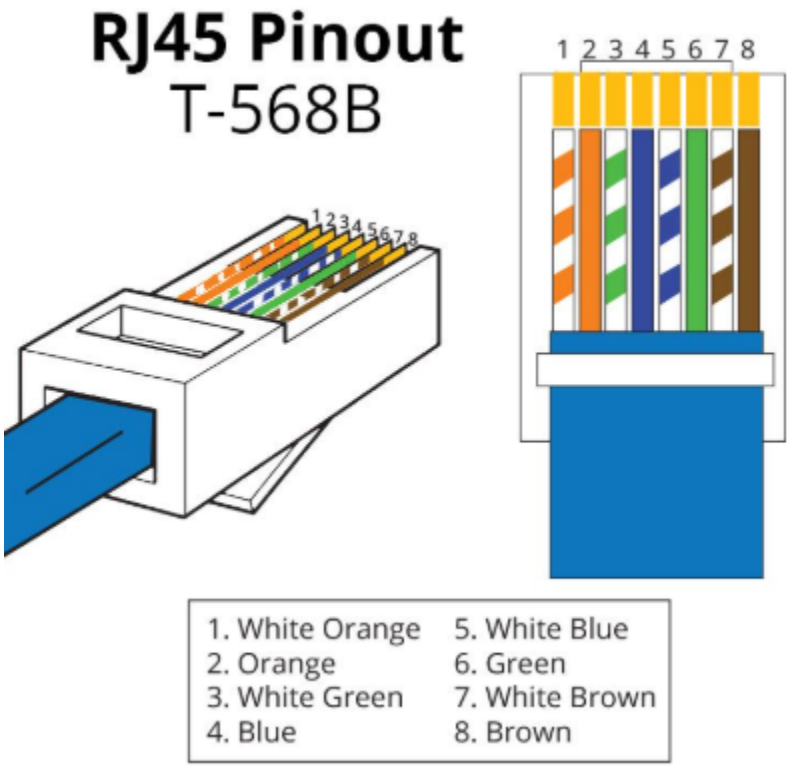
Camera Assembly Instructions for Ethernet Connection

Follow these instructions to connect a Cat5e Ethernet cable (**Note:** Cat6e cable can also be used, but the higher speed is not required for this application) and run it from the traffic cabinet to the Miovision SmartView Approach camera. If you supply your own Ethernet cable, it must be a shielded, outdoor-rated Cat5e cable with a drain wire and a temperature rating of -34°C to +74°C (-30°F to 165°F). Miovision recommends Quabbin 5710.

Note: The SmartView Approach 2 includes rubber grommets that support Cat5 and thicker Cat6 Ethernet cables. For Cat6 cables, use the white rubber grommet with the larger opening.

1. Before installing/crimping the RJ45 connector (cable run from the cabinet to the camera), place the coupler on the camera end of the Ethernet cable.

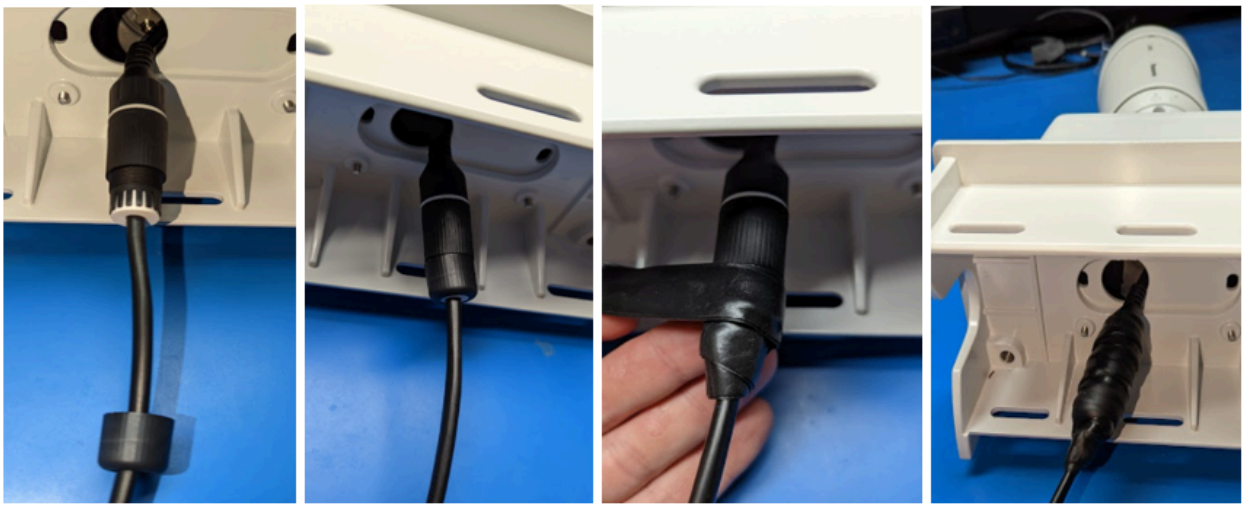
2. Install/crimp the RJ45 connector per the TIA-568-B pinout. Make sure that the Ethernet cable drain wire is connected to the metal shield of the RJ45 connector. Test the cable run connections/shield with an Ethernet cable tester.



3. Connect the RJ45 connector to the coupler on the camera module.

4. Connect the coupler, then rotate it clockwise to lock. When the coupler is properly locked, the arrow on the camera-side coupler will align with the Lock icon. **Ensure the connections remain dry during installation.**

5. Press the rubber grommet into the coupler, then tighten the end cap.
6. Wrap the coupler with silicone weatherproof tape (provided). Wrap the connection back and forth using an overlapping pattern.



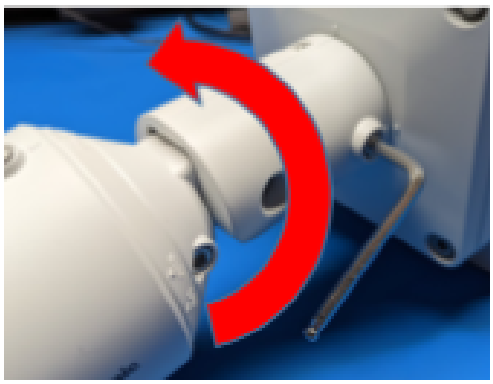
Installation at the site

Safety recommendations

- Follow all of your agency's required safety procedures when parking and using a bucket truck during the camera installation.
- Do not install components if conditions are unsafe, such as during adverse weather.
- Do not install components where overhead lines could potentially come into contact.
- If possible, inspect wires in the cabinet and traffic pole for any unsafe wear and replace them if necessary.

Mounting a SmartView Approach 1

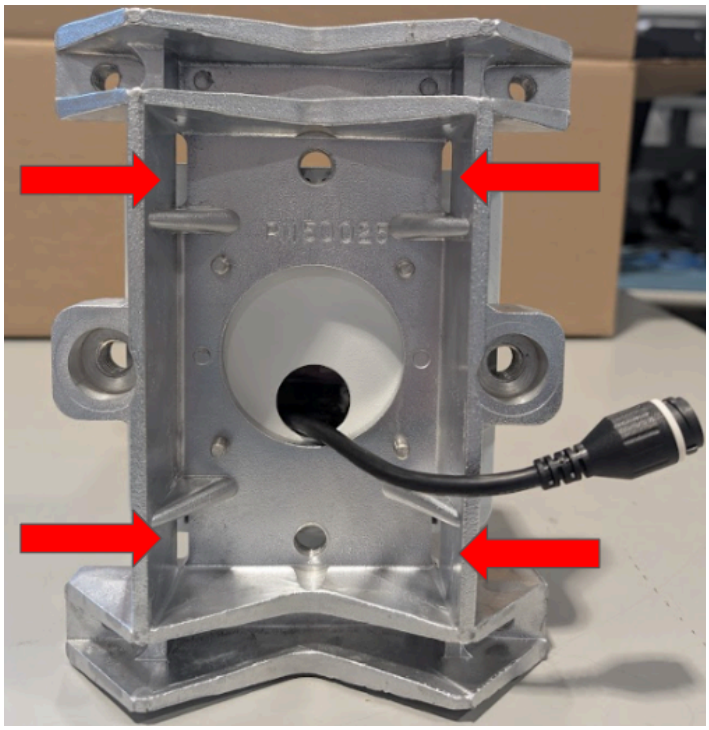
1. If necessary to change from vertical to horizontal mount configuration, loosen the hex bolt **(3/16 inch / 5mm hex key provided)** shown below and rotate the camera on the Y axis 90 degrees. Then re-tighten the hex bolt to secure it.



SmartView Approach 1

SmartView Approach 2

2. Mount the camera to a traffic pole or mast arm using lengths of stainless steel banding routed through the guide locations shown below.

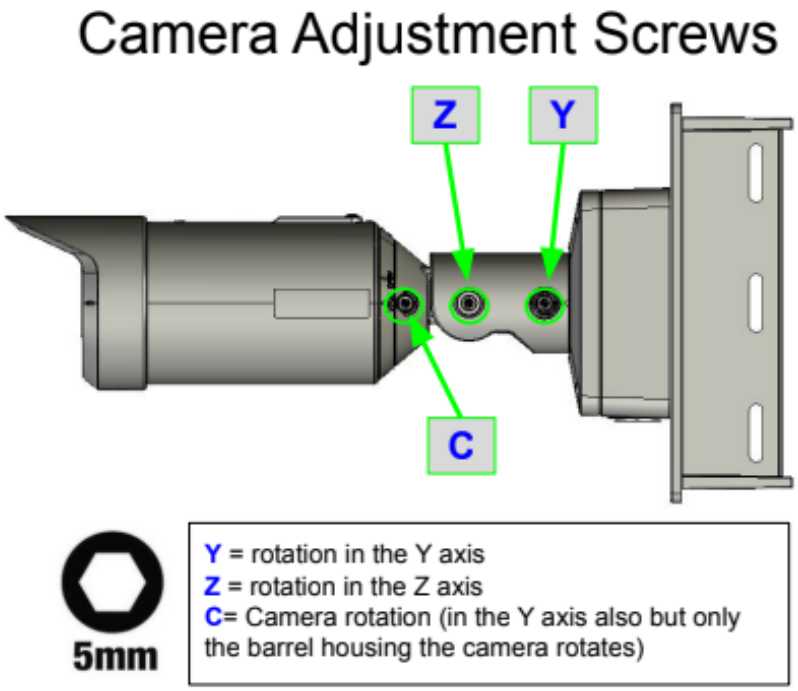


3. The camera should be aimed so that the zones are roughly centered in the field of view. This usually means that the camera should be aimed slightly downward. Avoid placing the camera where it might get blinded by sun glare during dawn or dusk. Mounting the

camera high and aiming it below the horizon, or deploying it on the other corner, can help mitigate such problems.

The camera should be mounted level. A small amount of tilt is acceptable if vehicles in the region of interest are not skewed.

The SmartView Approach 1 camera can be adjusted to point in the correct direction by loosening both 3/16-inch (5mm) hex bolts marked C and Z in the diagram below, then adjusting the camera angle. Then re-tighten both hex bolts to secure it in position.



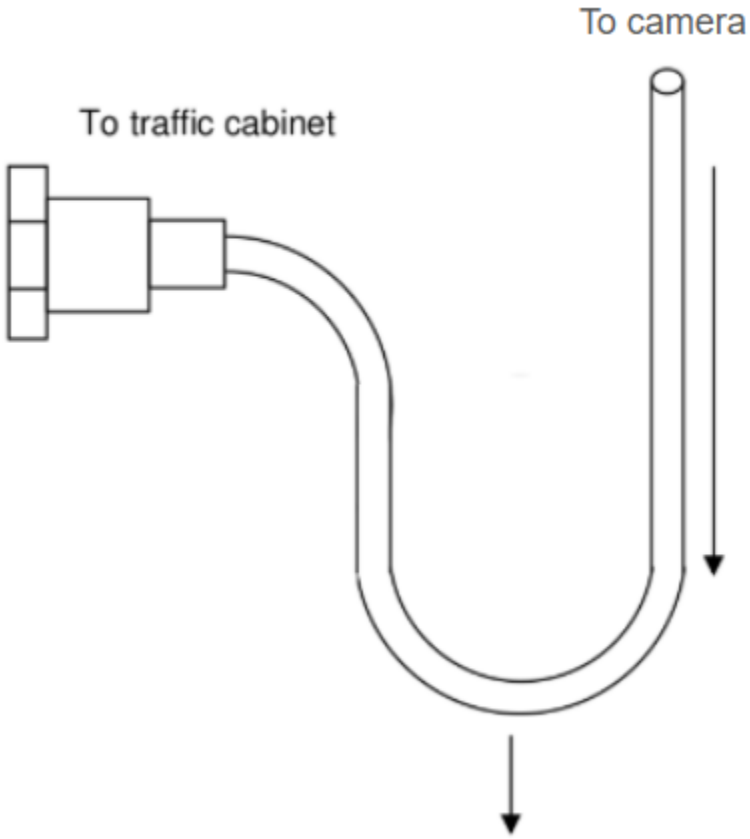
The SmartView Approach 2 camera can be adjusted by loosening the hex bolt (3/16 inch / 5mm) on the top of the camera. This frees up a ball joint, allowing the camera to be aimed where required. Re-tighten the hex bolt when the camera is pointed correctly.

4. The SmartView Approach 2 includes a solar shield that can be deployed to prevent the camera's lens from being blinded by the sun and to protect it from rain and ice. Deploy the solar shield by loosening the two torx T20 security screws (T20 tamper-resistant ¼" screwdriver bit provided), extending it to the desired position, then retightening the screws to hold it in place.

Finish Running the Ethernet Cable

1. Run the shielded Ethernet cable through the hole in the traffic pole, leaving 1 to 1.2 m (3 to 4 ft) of slack to follow proper drip loop procedure. **Note:** You may need to temporarily

remove a pole grommet to allow the Ethernet coupler to fit through.



Depiction of a drip loop. Rainwater may run down the cable from the camera at the right. The drip loop provides a natural and safe spot for water to drain.

2. At the traffic cabinet, cut the Ethernet cable to the appropriate length and then install and crimp the RJ45 connector. Ensure the drain wire contacts the shielded connector housing.

In-Cabinet Installation

Depending on your specific setup, you may need an external PoE switch. The TrendNet TI-PG541i is the approved switch for this application and must be used. Use the table below to determine if you need a PoE Switch.

In cabinet platform	***SV360 #1***	***SV360 #2***	***SVA #1***	***SVA #2***	***SVA #3***	***SVA #4***	**PoE Switch Required?**
ANY	X						No

ANY	X		X				No
Core DCM	X		X	X			No
SL/SS	X		X	X			**YES**
ANY	X		X	X	X		**YES**
ANY	X		X	X	X	X	**YES**
ANY	X	X					No
Core DCM	X	X	X				No
SL/SS	X	X	X				**YES**
ANY	X	X	X	X			**YES**
Core DCM	X	X	X	X	X		**YES**
Core DCM	X	X	X	X	X	X	**YES**

ANY means intersections with a SmartLink + SmartSense OR with a Core DCM
SL/SS means only intersections with a SmartLink + SmartSense
Core DCM means only intersections with a Core DCM
SV360 means SmartView 360
SVA means SmartView Approach

Connecting PoE

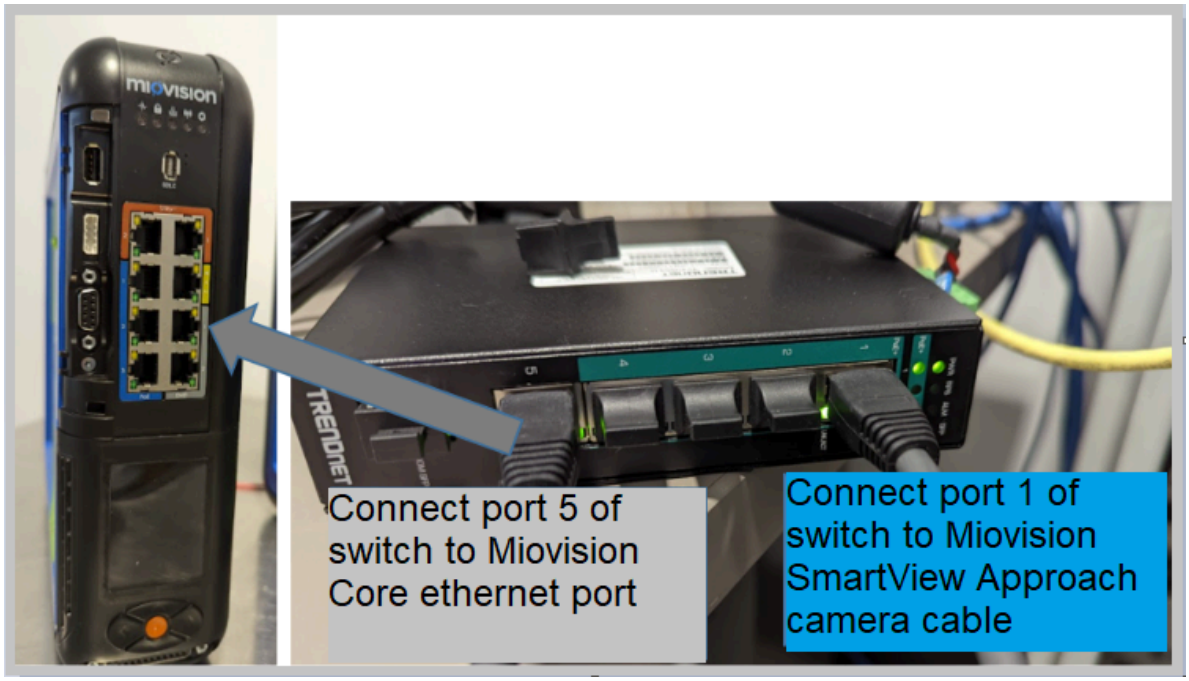
If your intersection does not require a PoE switch, simply connect the cable from the SmartView Approach directly to an open PoE port on the Miovision Core.

If your intersection requires a PoE switch and doesn't already have one installed, place the PoE switch inside the traffic cabinet near the Miovision Core DCM device.

Mount the switch on a DIN rail close to the Miovision Core. Connect Port 5 of the PoE switch to an open Ethernet port on the Miovision Core device. It does not need to be a PoE Ethernet port. **Note**: If you have a SmartLink and SmartSense, make sure to plug the switch into an open Ethernet port (not PoE) on the SmartSense.

The PoE Switch has an external power supply wired with a terminal connection on it. Connect the terminal block and the ground (to the ground screw) from the power supply to the switch. If additional details are required, please follow the manufacturer's instructions.

The remaining 4 ports on the switch can then be used for the SmartView Approach. If your intersection has one or two SmartView 360 cameras, they should be plugged in directly to the Miovision Core DCM's PoE ports.



Optional: Manual Configuration of externally sourced TrendNet TI-PG541i

The above instructions assume the TrendNet TI-PG541i PoE Switch has been purchased from Miovision. However, there are a few notable differences if your TrendNet switch has been sourced from a different vendor:

Miovision-Sourced TrendNet TI-PG541i	**Externally Sourced TrendNet TI-PG541i**
Includes power adapter, with easy install terminal block pre-wired	Power adapter not included The terminal block is mounted to the switch and will have to be wired separately: PWR (+/-) and Ground need to be wired.
The switch is preconfigured with the correct settings. No changes required.	By default, the web interface for the switch is at: 192.168.10.200 (login: admin/admin) The following settings must be applied. No other settings should be modified: **Basic Settings | System Settings** ip: 169.254.5.200 default gateway: 169.254.5.2 **Management | Maintenance | Server Control**

	enable ssh and telnet **Management | SNMP** **SNMP Settings** state: enable System Name: L2SWITCH **Community Name** Community String: public Rights: read-only Network Id of Trusted Host: 0.0.0.0 **Management | SNMP | SNMP Trap** **Trap Receiver** 169.254.5.2 v1 public **Trap Event** Deselect All. Check Port-Link-Change **Port Trap Event** Port 1 - 4 enable

Initialization

1. Turn the Core DCM on. If the Core DCM is already on, turn it off, then turn it back on. This step is required to make sure that the correct camera settings are applied to the SmartView Approach.

Test your installation

Confirm that the LEDs on Core DCM appear as follows:

- Heartbeat: flashing blue
- VPN: solid blue
- WAN: solid blue
- Cell: solid blue
- State: flashing (booting) or solid (booted) blue

Verify Video

Once the camera is connected, you can add the device to Miovision One and check the video to ensure the camera is pointing in the appropriate direction.

1. Camera should be level: Use objects perpendicular to the ground as reference, such as street lamp poles or building edges. These reference objects should appear mostly vertical in the camera.
2. Detection zones should be roughly in the center of the camera's field of view.
3. Look for obvious sources of occlusion that could be mitigated by adjustments to camera placement.
4. Try to avoid situations where head-on glare from the sun may affect performance. Mounting the camera high up and pointing in down is a common way to mitigate this problem.

You are now ready to proceed to Miovision One to configure detection zones. For help with this, go to https://www.youtube.com/watch?v=QrS0tb1V1q0

Troubleshooting

When the camera is warming up, "Warming Up-Please Wait" will be seen on the video feed. In this stage, zoom and focus capabilities are not possible. At -18 °F (-28 °C), it takes approximately 10 to 15 minutes for the internal heater to warm the device enough for this function to be restored. If a camera loses power, its previous settings are saved and will persist after reboot.

Copyright statement

Specifications outlined in this document are subject to change without notice.