

**MINI VU
OWNER'S**

MANUAL





General Safety Guidelines:

WARNING:

Failure to follow the warnings and instructions may result in electrical shock, fire, serious injury or damage to equipment.

Work Area Safety Guide

Keep your work area clean and dry.

Observe proper confined space safety regulations including using triple gas test devices.

Do not operate equipment in explosive or flammable environments.

Keep children away when operating the system.

Electrical Safety Guide

Do not expose equipment to rain or wet environment.

Keep hands dry and all electrical connections dry.

Ensure all power cord, connectors and wires are in good working condition.

Always use with a ground fault protected AC source.

Personal Safety Guide

Be alert and aware of your environment.

Be prepared and follow instructions.

Use proper protective clothing when operating equipment.

Use Equipment with Care

Do not force the equipment.

Do not allow inexperienced operators to operate equipment.

Maintain equipment and use only accessories that are recommended by the manufacturer.

For immediate assistance, contact Insight Vision.

Phone: 800-488-8177

Fax: 262-268-9952

Email Technical Service: service@insightvisioncameras.com

Email Sales & Support: sales@insightvisioncameras.com

Web Inquiry: www.insightvisioncameras.com

Please complete the following information for future reference:

Serial Number: _____

Date of Purchase: _____

Place of Purchase: _____

The serial number is on the bottom of the unit. Please retain a copy of your manual and receipt of purchase, in the event of theft, fire or warranty service.



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Warranty:

Insight Vision warrants to the original purchaser that should any of its products prove to be defective in material or workmanship in normal use, within one (1) year from the date of delivery, Insight Vision will, at its exclusive option, repair, replace or exchange the product or any of its parts.

THIS WARRANTY IS SUBJECT TO THE FOLLOWING LIMITATIONS:

The warranty does not apply to any product which has been subject to accident, negligence, alteration, abuse, misuse, overload, repair by anyone other than Insight Vision or its authorized representatives, or not maintained in accordance with the manufacturer's suggested maintenance requirements.

The warranty applies only to components manufactured by Insight Vision. The appropriate manufacturer's warranty, if any, shall apply to components not manufactured by the company.

The warranty does not apply to flex-link connectors, rod, LED light rings, cable, rollers, O-rings, and skids, or other parts, which are considered consumable. The replacement of these items is part of normal product maintenance.

The warranty shall not apply if the products are used or operated in any manner not consistent with their intended purpose.

The warranty is limited to repair or replacement of defective products and parts during the warranty period, and shall be the exclusive remedy. Insight Vision shall in no event have any other obligation or liability of any nature arising from the breakdown, malfunction, defect or other failure of the product, including, without limitation, any liability for service, maintenance, repairs, personal injury, property damage, loss of profits, loss of use or other consequential damages.

Any action for any claimed breach of this warranty shall be brought within one (1) year from the date of delivery of the product.

The purchaser must return the defective product, part or component to the Insight Vision factory in Saukville, WI 53080 at the purchaser's expense, properly and adequately packaged, with insurance and transportation pre-paid. Insight Vision will either repair or replace the defective product, part or component, at its option, and will return it to the purchaser at the customer's expense. In no event shall Insight Vision be liable for delay in repair or replacement and return under this warranty. Insight Vision will endeavor to effect appropriate repairs in the shortest time practical, with respect to the customer having beneficial use of their equipment.

Insight Vision neither assumes nor authorizes any person to assume any other liability or make any other warranty in connection with the products.

THIS WARRANTY IS EXPRESSLY GIVEN IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. INSIGHT VISION EXPRESSLY DISCLAIMS ANY OTHER WARRANTY, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

General Overview:

The Mini Vu system is a portable push camera system designed to inspect and record laterals, mainlines, pipelines and underground infrastructure. The rugged RAM case with 5.0" color monitor features an On-Screen Distance Counter. Slide in the M-18 Battery along with a USB flash drive and you are ready to record your inspections in sewer pipes from 2" straight up to 12" in diameter (with optional centering skid). A built-in always-on sonde transmits a 512 Hz frequency which is locatable with a 512 Hz locator. The Mini Vu system also comes with a free downloadable app for IOS and Android mobile devices which allows users to view, record, snapshot and share sewer inspection videos.

System Maintenance Requirements:

The following maintenance procedures are recommended for all Mini Vu systems. Standard warranty policy dictates that components and accessories subject to wear and tear are not covered under the One (1) year warranty. Therefore we strongly recommend that all systems be maintained according to the following procedures. Please be advised that Insight Vision will not allow warranty coverage for these items if these procedures are not followed.

Mini Vu Command Module:

The Mini Vu command module incorporates a USB port as its standard data storage device. This port has no moving parts or recording heads so it does not require a cleaning device. However, if water, dirt or dust become present in this connector due to extreme conditions in the field, owners/operators will be responsible for the cleaning of the connector/port area using a Q-tip or other non-abrasive cleaning tool to remove the debris before inserting a memory stick.

NOTICE: The Mini Vu command modules is not water-resistant. Insight Vision assumes no liability for any water damage, caused directly or indirectly, by improper usage of the system. Damage to the system components, the internal mother board, and injury to you may result if water is applied to the command module. Water damage will not be covered under warranty, and may be cause for voiding of command module warranty.

Push Rod:

The Mini Vu push rod termination are covered for one (1) year under warranty. This warranty policy covers workmanship on the termination connection ONLY and does not cover push rod breakage or kinks in other parts of the rod. While recoiling your push rod, wipe down with damp rag and check for kinks, or cracks after every inspection.

O-Rings:

O-rings are critical in preventing water from penetrating the camera and connections. O-rings are subject to wear and tear and may fail due to age and other conditions. They should be inspected regularly and replaced whenever needed. When O-rings are working properly, a small amount of water and sometimes fine particles of grit will build up behind them. Any time the camera or sonde connection is taken apart and exposed, there exists the risk of grit wearing down or possibly even tearing the O-ring. It is also possible for water to then enter the connection area once exposed.

All connections, once opened or exposed, MUST be thoroughly cleaned and dried before re-connecting. We recommend using an old toothbrush or other soft bristled brush to clean the O-ring areas and remove the grit or fine debris. Then, completely dry the area around the male and female connector and O-ring before re-connecting.

Sonde:

The sonde transmits a 512hz frequency that is locatable with a locator. We recommend after every inspection, power off the system and disconnect the sonde. Wipe down the sonde with a damp towel and check for damages or missing O-rings on the male and female connector.

Camera Head:

All Mini Vu camera heads are covered for one (1) year under the standard warranty against all defects in workmanship. These cameras are all sealed and water-resistant. Warranty coverage will apply for any and all internal failures to the camera head unless external damage is evident. This would include a broken window and any deformation to the stainless steel metal housing of the camera head.

NOTICE: The system includes 2" and 3" protective skids that MUST be used at all times. These skids are designed to aid in the centering of the camera head and protect the camera head from extreme wear. Failure to use the provided skids will result in the direct wear of the stainless steel body of the camera head, especially the front nose cone. This wear could result in a breach of the window seal allowing water into the camera head. This type of wear is not covered under warranty.

Hub Assembly:

The hub assembly houses the encoder, wiring terminals, and solder joints that are susceptible to water damage. Although it is enclosed, the case is not water-proof. To clean use a damp cloth. You will find the warning label on the hub assembly: **NOTICE: DO NOT POWER WASH THE HUB ASSEMBLY AREA.**



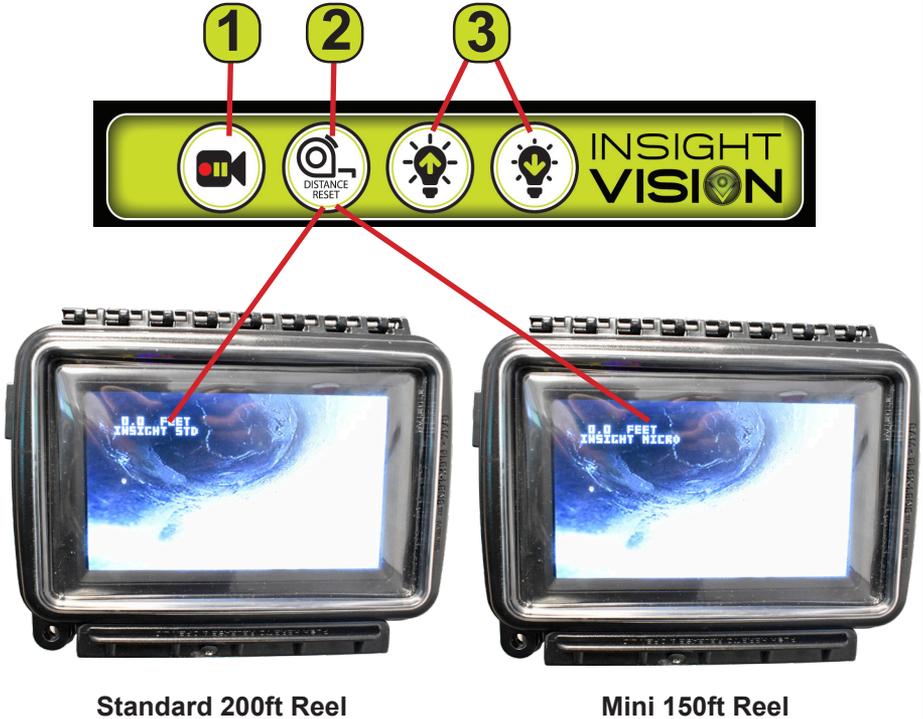
System Power-Up:

1. Plug in Video Interconnect Cable to back of MiniVu and other end to Reel Hub. Be sure the arrows match up.
2. Slide in M-18 battery into dock plate on the back of the MiniVu until it clicks in place.
3. System will come on automatically when battery is locked in.
4. Lights can be controlled by the  up and  down arrows on the top of the unit.
5. To record to your USB flash drive, after the unit is turned on insert your USB in to the USB flash drive. Press the  record button on the left of the keypad to start your USB recording. When recording has started you will see the red indicator light come on. When you are ready to stop recording, push the  record button on the keypad. The red light will flash a couple of times. Once the red light is completely off, it is safe to remove your flash drive.



Main System Controls

- 1. Record/Stop** - Record live video by pressing the record button. The red light below the USB port will be on. Pressing the button again will stop the current recording. Red light will flash then shut off.
- 2. On-Screen Distance Counter Reset/Reel Button** - The button will reset distance counter to zero and also switch reel sizes from STD (200ft) or MICRO (150ft). The distance counter is in the reel hub, reading the distance pushed in pipe but does not pinpoint area.
- 3. Light level** - Increase/Decrease brightness on the camera head. It is recommended to keep light level at maximum for most pipe conditions.



MOBILE STREAMING APP - WIFI AV-HD

ANDROID INSTRUCTIONS

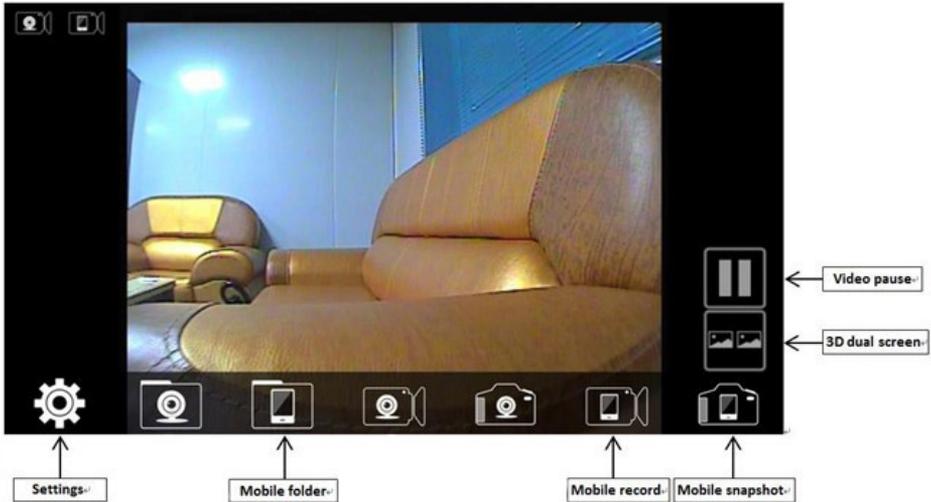
Installation:

1. Go to the Google Play store
2. Search "WIFI AV-HD" software and download the App.
3. Install the App.



Connecting:

1. Turn on your camera system.
2. Navigate to the WIFI settings on your Apple device. The initial SSID of the device is "the command module serial number for your unit" then type in the password (default password is "12345678"). We recommend that you **do not update the SSID** or password as there is no way to reset it if you forget it. It will have to be sent back and factory reset.
3. Navigate to the WIFI AV-HD app.
4. Open the App



NOTICE:

If you are experiencing unusual background noise on your unit while using the WIFI app, adjust your WIFI app device settings to channel 10, then restart your command module.

NOTICE:

To transfer snapshots and video from the phone, the phone must be restarted for the files to save to the gallery or photos on the phone. Once they save to the gallery or photos section on the phone they can be transferred.

APPLE INSTRUCTIONS

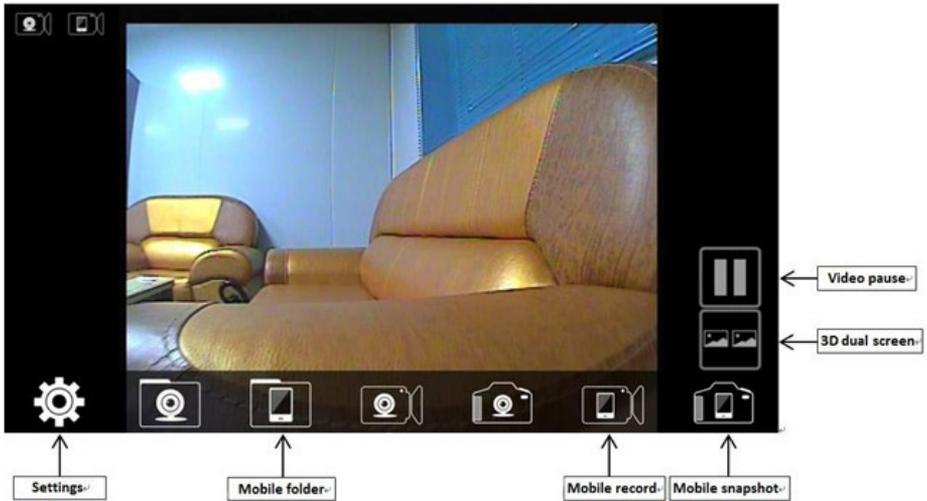
Installation:

1. Go to the App store
2. Search "WIFIAV-HD" software and download the App
3. Install the App.



Connecting:

1. Turn on your camera system.
2. Navigate to the WIFI settings on your Apple device. The initial SSID of the device is "the command module serial number for your unit" then type in the password (default password is "12345678"). We recommend that you **do not update the SSID** or password as there is no way to reset it if you forget it. It will have to be sent back and factory reset.
3. Navigate to the WIFIAV-HD app.
4. Open the App



NOTICE:

If you are experiencing unusual background noise on your unit while using the WIFI app, adjust your WIFI app device settings to channel 10, then restart your command module.



INSTRUCTIONS FOR TRANSFERRING IOS PHOTOS AND VIDEOS

User must have iOS 11 or newer installed on their device.

For transferring a recorded video

1. Open the settings icon on your device
2. Go to control center.
3. Ensure that "screen recording" is set to on (there should be a red circle with a line in the middle of it just to the left, this tells you it is set to "on")
4. Find video in the wiflav-hd app and select it. Press pause and make sure that the video is set at the beginning of the recording.
5. Do a diagonal swipe, from top right to bottom left of your iOS device to open the control center menu
6. You should see an icon that has a solid circle with another circle around it, press this to begin the recording. You will see a 3 second timer appear, this lets you know that the recording will start in 3 seconds
7. Press a blank spot on the screen to make the control center menu disappear, this should bring you back to the video you have ready to play
8. When you see a red oval appear in the top left corner of the screen press play on the video
9. When the video is done playing, tap the red oval in the top left corner, a prompt will appear asking if you want to stop screen recording, press stop
10. The video is now stored in the photos folder of the users device, in the "re-cents" and "videos" section of the app
11. From here user can play the videos and email them out

For transferring snapshots/photos

1. Go to the area in the wiflav-hd app that the snapshots/photos are stored
2. Select a photo
3. Press volume + and power button simultaneously (top button on the left side of the phone and the button on the right side of the phone).
4. This brings up a screen where you can manipulate the photo you just took. You can resize it and then save it or just save it right away by hitting "done"
5. Choose save to photos, that photo is now saved in the photos app, photo will now be saved in the photos app in the "re-cents" folder

Base Frame

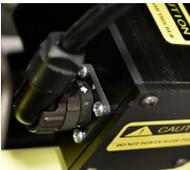
Vertical Frame

The large base frame is a rugged aluminum reel designed to house 200', 300' and 400' of rigid (A) type rod. This base frame comes with an integral digital footage counter. The design of this frame brings the push rod out from the front to allow for easy operation. When camera is not in use please store in basket. All anti-slide supports are made with a non-marring material safe for all floor surfaces..



Push Rod

This push rod is .475" in diameter and has been specifically designed for longer pushing distances in 2"-12" pipe. Attempts should not be made to push this rod type through 2" 90 degree bends as rod breakage may occur. This rod type is available in 200', 300' and 400' lengths on the large vertical base frame.



Debris Bag

The Debris bag is intended to minimize drippings while working indoors and fits over the push rod cable. It is easily removable for cleaning.

Video Connection Port

The video connection port is installed on the frame and on the command module. Use the Video Interconnect Cable to connect the command module to the reel before starting up the camera system.

Spring & Camera Head Removal Tool

The S-tool is used to remove the spring from the push rod.

Caution: Always wear safety glasses while performing any repairs.

Video - How to remove spring, camera & sonde

<https://youtu.be/8fsfiOy1yXk>



Accessory Bag

Carry all your gear in this handy bag.

Camera Head

This camera has a self-leveling feature that will position the camera so that the top of the pipe will appear on the top of the display. It is a color camera with an adjustable LED light ring for illumination of the sewer pipe being inspected. The camera is intended for operation in 2" straight pipes up to 12" I.D. (with optional centering skid). It works with any Insight Vision command module. The diameter of the camera head is 1.3" x 2" long.

CAMERA FEATURES:

- Modular Design Camera
- Stainless Steel Housing
- Water-Resistant Camera Head
- 1/4" CMOS Sensor
- 12 Ultra-bright LED Lights
- Tough Sapphire Glass Lens



WARNING: To prevent eye damage, DO NOT stare directing into the light beam at a close range. The camera head is not intrinsically safe or explosion proof!

NOTICE: The sonde is not built into the camera head. It is a removable sonde connector.



Flexi-Spring

The flexi-spring connects to the end of the push cable, protects the sonde and connects to the camera head, assisting with pipe bends.

Sonde/Spring Assembly

The removable sonde is connected inside the spring assembly. It continually transmits a signal at 512Hz, while the system is turned on, and can be located with any locator capable of picking up a 512Hz signal.

Skid Set

The skids are intended to protect the camera from damage due to debris in the pipe being inspected. The included skids come in two sizes. The 2" small skid is for use in 3-4" diameter pipes. The 3" large skid is for use in 4-6" diameter pipes.



Skids Allen Wrench

Use the Allen wrench provided to adjust the three set screws to install or remove either of the skids from the camera head.

Video Interconnect Cord

The video interconnect cord will need to be connected from the reel to the command module for the command module to operate properly.

M18-Battery & Charger

The M-18 Battery has a charge indicator so you can see the battery power level. When plugged in to the charger, the light on the charger will turn from red to green when the battery is at full power.

USB Flash Drive

You can record your inspections to a USB flash drive.

What's Included:

- Mini Vu
- USB Flash Drive
- Ram Mount
- M-18 Battery
- M-18 Battery Charger
- Reel with Camera Head
- Reel Debris Cover
- 2" & 3" Skids
- Allen Wrench
- S-Tool
- Accessory Bag
- User Manual

Optional Available Accessories:

- 512Hz Locator
- 6" to 8" Centering Skid



F.A.Q

- 1. How do I know if I am recording on the Mini Vu System?**
- The red LED light below the USB drive will be on when you are recording.

- 2. How do I playback my recording on my computer?**
- Insert USB Memory Stick into your computer. From the USB Memory Stick, launch the your preferred Media Player. Simply use the open file functions in the player to open and play recorded videos. Please contact your computer support person for additional information on playing videos on your specific computer.

- 3. How to clean the Mini Vu?**
- Use a damp cloth to gently wipe the screen protector and exterior of the case.

- 4. How often should I clean the camera head?**
- After every use, always take off your camera head and clean it.

- 5. How often should I clean the reel?**
- After every use, always shut-down your camera system first and wipe down. Be sure the system is clean of any debris.

DO NOT POWER WASH THE CAMERA SYSTEM



Trouble Shooting Guide

1. Why is there fog inside my camera lens?

- Water moisture indicates a failure of the camera head seal. The camera head was manufactured to the highest standards and procedures. Please contact Insight Vision for assistance in returning your system to its optimum performance.

2. What happens if I lose video during operation?

- Always shut down your camera system before removing or reconnecting any part of the system. The loss of video during operation could indicate a number of different situations. Contact Insight Vision for assistance in returning your system to its optimum performance.

3. What happens if I lose the LED lights on my camera head during an inspection?

- Verify that the LED lights are fully bright by pressing the lights "UP" button on your Mini Vu command module a number of times. Disconnect push rod from basket at basket hub and connect camera to hub connection. If the LED lights do not increase to full brightness contact Insight Vision for additional support.

4. What should I do for services repairs, and warranty returns?

- All services repairs and warranty returns will need an RMA (Return Material Authorization) number. Simply call us directly at 800-488-8177. Ship to Insight Vision, 600 Dekora Woods Blvd. Saukville, WI 53080.



Technical Specifications

Camera

Self-Leveling	Yes
Diameter x Length	1.3" Diameter x 2" Length
Video Resolution	640 x 480
Weight	5.9 ounces
Light Ring	12 LED
Image Sensitivity	0.025 Lux
Image Sensor	1/4" CMOS
Construction	Stainless Steel Body
LED Window	Polycarbonate
Camera Lens	Sapphire Glass

System Control

Case Dimensions	6 3/4"W x 5 1/2"H x 3"D
Data Storage	16GB USB Flash Drive
Distance Counter	On-Screen in Feet
Recording Format	H.264
Controls	Record, Counter Reset, LED
Weight	1.5 lbs
LCD Size	5.0"
Power Source	M18 Battery *Included with System

Push Rod/Frame

Cable Length	200ft, 300ft, 400ft
Pipe Size	3" to 6" (up to 12" with Optional Skid)
Cable Jacket	Polypropylene
Push Rod Diameter	0.475" OD
Frame Dimensions	30"L x 16 1/2" W x 32 1/2" H
Weight	62 lbs.
Sonde Frequency	512 Hz
Protective Skids	2" & 3" *Included with System



Made in the USA

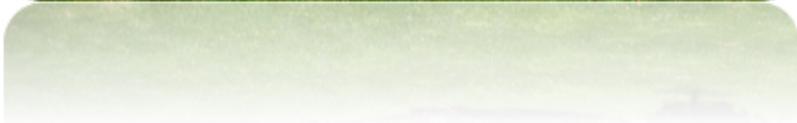
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