



HYPERFIRE 2™

Security Series Cameras

User Manual



HS2X – General Surveillance
HL2X – License Plate Capture

Copyright: August 2022

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Camera Overview

Congratulations on purchasing a RECONYX® camera. RECONYX® has been the leader in motion activated digital cameras since 2002. Your HyperFire 2™ camera is a state-of-the-art digital camera with a Passive Infrared (PIR) motion detector and a night time infrared illuminator; all contained in a secure, rugged and weather-resistant case.

You will find that using the HyperFire 2™ camera in conjunction with MapView™ Security image management software will be one of your most valuable tools in gathering and analyzing data.

This software is available as a **free download** from our website at www.reconyx.com/software/securityview.



NOTE: For a consistently good image viewing and video playback experience, we recommend that you use the picture viewer and video player within SecurityView.

Contents of this package:

- HyperFire 2™ Camera (HS2X or HL2X)
- Adjustable Webbing Strap for mounting camera
- This instruction manual

Other things you will need:

- Secure Digital® (SD, SDHC or SDXC) Memory Card up to 512GB
- 12 AA Batteries

NOTE: *NiMH rechargeable batteries or Energizer® 1.5V AA Ultimate Lithium™ are the only battery types recommended in RECONYX® Cameras.*

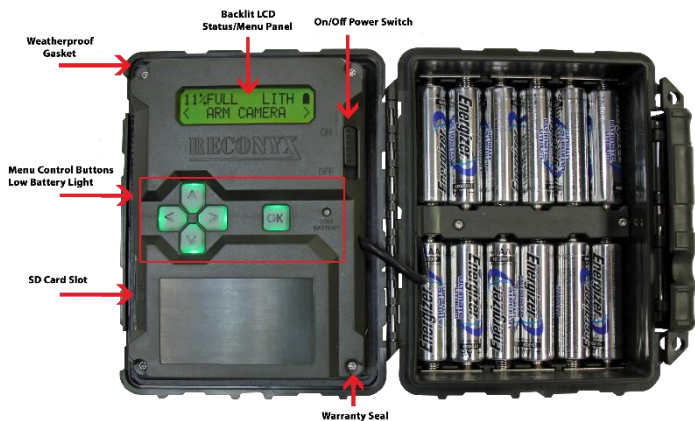
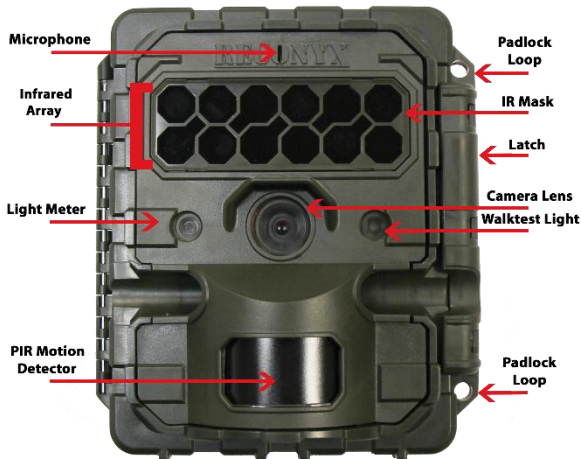
NOTE: If you have any questions or concerns relating to the operation or functionality of your camera, please contact our Technical Service Department by email at support@reconyx.com or by calling toll free [866-493-6064](tel:866-493-6064).

HyperFire 2™ Specifications

	HS2X	HL2X
Purpose	General Surveillance	License Plate Capture
Illumination Range at night	No-glow Covert Infrared up to 60 feet	No-glow Covert Infrared up to 50 feet for License Plates
Images	3 MP or 1080p HD color images by day; monochrome images by night	720p widescreen or standard color images by day; monochrome by night
InstaOn™ Trigger Speed	1/4 second	1/5 second
RapidFire™ NearVideo™	Up to 2 frames per second	Up to 3 frames per second
Video with Audio	720p 20 fps	720p wide or std 5 fps
Loop Recording	Available option: Continuous recording. Older pictures/videos overwritten by new ones.	
SD Card Capacity	Up to 512GB: (4GB = approx 10,000 pictures)	Up to 512GB: (4GB = approx 20,000 pictures)
Software Included	MapView™ Security	
Moisture Absorbing Desiccant System	Available for purchase	
Time-Lapse Surveillance	5, 15 or 30 seconds or 1, 5, 15, 30, or 60 minute intervals	
Time-Lapse and Motion Sensor Scheduling	Clock based (Fixed) and Solar schedules available. Schedules can also be assigned to different days of the week. (i.e. different weekday schedule from weekend schedule).	
Customization Options (additional charges apply)	External Power Jack, Solar Panel Power Unit	
Warranty	5 year	

Controls & Parts Diagram

Weather-Resistant Case



Batteries & Memory Cards

Accessing Batteries, Memory Card & Camera Controls

To install the batteries and memory card, open the latch on the right side of the camera by grasping behind the latch and flipping it toward the front. The camera will open like a book, allowing access to the batteries, memory card and settings.

Step 1



Step 2



Step 3



TIP: Each time you open your camera it's a good practice to:

- Make sure the main gasket is seated properly and is clear of debris.
- Be sure that the windows on the front of your camera are clean.
- Also be sure the latch is fully seated when closing your camera to ensure a weather-tight seal.

Battery Specifications and Installation

The RECONYX® HyperFire 2™ camera uses 12 AA-cell batteries. We highly recommend using either Energizer® Ultimate Lithium™ batteries or high-quality NiMH Rechargeable batteries in your camera. Alkaline batteries are not recommended. They do not provide as much power as Lithium or NiMH batteries and are adversely affected by both hot and cold weather.

NiMH will operate at temperatures down to 0°F; Lithium batteries to -40°F.

NOTE: We strongly advise that you not attempt to run alkaline batteries in your RECONYX® cameras as the performance will be very poor. Also, alkali damage caused by alkaline batteries is not covered under warranty.

NOTE: Be sure to load batteries in the proper orientation (alternating positive/negative, six in each battery bay).



Warning! Do not mix battery types! Damage to the camera can result and your warranty will be voided if you mix battery types.

Battery Performance

Because camera settings, camera activity, individual battery performance and temperature all vary, there is no way to precisely predict a camera's run time, the total number of images that can be taken or the temperature at which the camera will operate on any given set of batteries. Therefore, the following table shows approximate values and should be used as a guide in determining what type of batteries will best suit your needs.

NOTE: The values in the chart below were based on tests using 12 batteries; taking 50% daytime photos and 50% nighttime photos at 70°F. Use of video will greatly reduce these estimates.

<u>Battery Type</u>	<u>Operating Temperature</u>	<u>Number of Images</u>
AA Energizer® Ultimate Lithium™ (1.5V)	-40° F (-40°C) and above	HS2X: 40,000 HL2X: 80,000
AA Rechargeable Nickel-Metal Hydride (1.2V, 2600mAh)	0° F (-18°C) and above	HS2X: 20,000 to 30,000 HL2X: 40,000 to 60,000

*** High temperatures can reduce run time with NiMH batteries by 50% or more.**

TIP: You can purchase 1.5V Lithium batteries as well as RECONYX® certified NiMH rechargeable batteries and chargers at www.reconyx.com.

Your camera will display the status based upon battery type. Be sure that the display is showing the same type of battery that you are using. You can change the battery type in the main menu.



Secure Digital® (SD, SDHC, SDXC) Card Specifications

A Secure Digital (SD/SDHC/SDXC) card is used to store the pictures your camera captures. These images may be transferred to your computer using standard image viewing software or RECONYX® MapView™ mapping and image management software.

TIP: Many digital cameras can be used to view images taken by the HyperFire 2™ camera. No need to purchase a special purpose viewer!

Insertion and Removal of the memory card

Make sure the orientation is correct and that the card is aligned properly. Push gently on the memory card as shown below until it clicks into place.

Warning! Inserting the memory card upside down or backwards could damage the camera or the memory card. **Damage resulting from inserting the card incorrectly is not covered under warranty.**



To remove memory cards:

- 1) Press <OK> to disarm the camera (the battery status and number of pictures taken since last armed will be displayed on the LCD).
- 2) Switch the power OFF.
- 3) Press and release the card to partially eject the memory card.
- 4) The card can then be removed by grasping it with your fingers.

NOTE: Always disarm the camera (by pressing OK) and switch the power off before removing or inserting the memory card.

Memory Card - File System Requirements

Secure Digital cards have various speeds and capacities. Larger capacity cards are capable of storing more images. Your HyperFire 2™ camera can accept cards up to 512 GB, but most users will find 32 GB cards to be more than adequate for normal use.

Cards with higher speed ratings are capable of reading and writing images faster. This is advantageous when taking RapidFire™ image sequences or videos.

NOTE: A 32 GB memory card will store approximately 80,000 images or 3 hours of video.

Troubleshooting your memory card

If you have a memory card that does not seem to work, or you used the card in another device, you may have to re-format your memory card. This can be done with the included MapView™ Security software under the “Tools” menu item or with any Windows® Operating System.

Windows® – Steps to format memory card

Step 1: Insert your memory card into your computer's card reader.

Step 2: You should see your memory card under the list of available drives. Be sure to check its contents first to make sure that you have the right drive.

Step 3: Right-click on the drive and choose “Format”. (*un-check “Quick Format”.*)

Step 4: Once the process is completed, take the memory card out and insert it into your Camera.

TIP: *We recommend that you purchase two memory cards per camera so that you can swap cards in the field.*

You can purchase RECONYX® certified memory cards at www.reconyx.com

Setup & Programming

With the SD card inserted in the camera, turn the camera on using the **On/Off** switch.



If this is the first time you've used your camera, it will take you through a setup wizard to help you with initial setup. It will start by asking you to set the date.

Use the up and down buttons to change numbers and the right and left buttons to scroll through settings for year, month and date. The OK button will take you to the Set Time screen. Proceed through the setup wizard until setup is complete.

When going through the initial setup wizard, you will be given the option of entering Latitude and Longitude. You can skip this on initial setup and enter it later if you don't know the exact location where you will be deploying your camera. See Location Information section below for more details on what the location information can do for you.

All of the settings detailed below are available on your Security Series Camera.

Default Settings

NOTE: Throughout this manual, default settings are shown in **red letters**.

Your RECONYX® HyperFire 2™ camera comes pre-programmed with factory default settings. By default the HS2X camera will take **3 pictures per trigger with a 1 second pause between pictures and no delay between triggers**. The HL2X camera will take **5 pictures per trigger in RapidFire™ mode with no delay between triggers**.

If you wish to change your camera's settings you can do so easily in the field at any time. Changes are easily made using the control buttons and the LCD display. Once you make selections, they are retained by the camera – even when the camera is off and the batteries are removed – so that you don't need to make selections again unless you want to make any changes.

HYPERFIRE 2™ Programming Menu

Your camera includes two main levels of options:

Level 1: Main Menu options

Level 2: Change Setup options

The programming menus are set up so that the most commonly used items are at the top level. Other camera settings that are not as frequently accessed do not show up every time you are setting up or moving your camera.

NOTE: As with the date and time, you can move through and select any of the menu options by pressing the directional buttons to scroll and the **OK** button when the menu or option you want to select is displayed.

TIP: Use the “Programming Diagram” on the next page for a better understanding of how the options are accessed on your HyperFire 2™ camera.

The backlit LCD includes two lines of information. The top line displays the menu, option or setting you are currently accessing. After you make a selection, it may display additional information. The bottom line displays the available options/settings. Selections you can choose from are always displayed between < > brackets on the bottom line.



You can change your camera settings any time you like, either prior to using the camera or in the field. Likewise, you can switch memory cards as needed and check the remaining space on your memory card as well as your remaining battery power.

NOTE: The camera will remember the settings even when shut off, you do not need to reconfigure the camera unless you want to change its behavior.

Level 1: Main Menu Items

NOTE: Main Menu Items are shown in **Yellow** on the Programming Diagram.

Arm Camera – When you select this option, your camera arms in ten seconds. You can cancel the arm sequence by pressing the “OK” button.

Change Setup – Allows you to change the way your camera functions – see details below.

WalkTest – When you select this option, your camera flashes an indicator light so that you can test its aim by walking in front of it. The WalkTest mode shows you exactly where the camera’s active motion detection zones are located (see page 18 for more information). The tilt of the camera is critical, as slight changes are magnified at greater distances from the camera.

***TIP:** If left in WalkTest mode, the camera will automatically arm itself after 2 minutes with no motion events. This allows you to set the camera up, check its aim using WalkTest and then just walk away.*

Erase Card – When you select this option, your camera wipes your entire memory card clean, removing all images and other information from the card. You should **not** select **Erase Card** unless you are absolutely certain you want to remove everything from the card.

Battery Type – Allows you to select what type of batteries you are using to accurately display the amount of power remaining.

Status/About – When you select this option, your camera displays the number of pictures, number of videos, time, date, firmware version and serial number of the camera. The left and right buttons scroll between these items.

NOTE: The battery status shows the level for different types of batteries. If you change battery types, be sure to change the “Battery Type” setting.

Level 2: Change Setup Options

NOTE: “Change Setup” options are shown in **Grey** on the “Programming Diagram”.

MOTION – All settings related to how your camera behaves when motion is detected are grouped under this menu item. Default settings are shown **RED CAPITAL** letters.

- 1) **Motion Pictures** – **ON**, off
- 2) **Pictures Per Trigger** – 1,2,**3**,4,5,6,7,8,9,10 (HL2X default is **5**)
- 3) **Time Between Pics** – RapidFire, **1s**, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s (HL2X default is **RAPIDFIRE**)
- 4) **Motion Videos** – on, **OFF**
 - a) **If On, Video Length*** – 5s, **10s**, 15s, 30s, 60s, 90s (HL2X default is **5s**)
 - b) **If On, Dynamic Video** - on, **OFF**
(HL2X default is **ON**)

If Dynamic Video is turned on, the video will end early if it appears that the subject that triggered the camera is either no longer moving, or has left the scene. 5 and 10 second videos will end if no motion is detected for 3 seconds. 15 second videos will end if no motion is detected for 5 seconds. Longer videos will end if no motion is detected for 10 seconds.
 - c) **Quiet Period** – **NO DELAY**, 5s, 10s, 15s, 30s, 1m, 2m, 3m, 5m
- 5) **Sensitivity** - low, low/medium, medium, medium/high, **HIGH**, very high
- 6) **Motion Schedules** – **24 HOUR**, **Add Solar**, **Add Fixed**

By default the camera operates 24 hours per day every day of the week.

If you want to schedule your camera's operations, there are two ways to define start and stop times for your camera. You can add Solar schedules and/or Fixed schedules.

With HyperFire 2™, RECONYX® has added a new method for scheduling your camera that we call **Solar Adaptive Scheduling™**. With Solar Adaptive Scheduling™ you can program your camera to start and stop taking pictures at times relative to sunrise and sunset. If you are monitoring subjects whose

behavior is tied more to the sun's rising and setting than it is the clock, this method of scheduling the camera makes a lot of sense. And the best part about it is that as the sunrise and sunset times change, your schedule adapts with the changing length of day.

When you add a Solar schedule, you must specify start and stop times in (number of minutes) (before or after) (sunrise or sunset). For example, you can specify that the camera will turn itself on 30 minutes before sunrise and turn itself off 90 minutes after sunrise. Or you can schedule your camera to run from an hour before sunrise, to an hour after sunset.

When you add a Fixed schedule, you simply specify the start and stop times of each period you want the camera to be active.

You can define up to 5 windows of operation (schedules) to be used simultaneously. This can be a combination of fixed and solar schedules. These schedules can each be assigned to different days of the week if desired. By default they are on every day of the week (**S M T W T F S**).

Note: Solar Adaptive Schedules are closely tied to, and rely on, accurate Location information being entered into your camera.

If you are a USA user and you do not set a specific latitude and longitude for your camera, the Solar Adaptive Schedules will use the center of your specified state or territory to determine approximate sunrise and sunset times. If you set a precise latitude and longitude for your camera, then your sunrise and sunset times will be accurate to within a couple of minutes, and they will adapt on a daily basis as the sunrise and sunset times change.

If you are an International user, you must enter your latitude and longitude for Solar Adaptive Schedules to work. International users must also Validate the Sunrise Time on the day you set your location and/or change your cameras internal clock. This allows the camera to sync up with your local time when it determines sunrise and sunset.

If you are above 65 degrees North or below 65 degrees South, Solar Adaptive Schedules are not available, as length of day/night prohibits their effective use.

TIME LAPSE – All settings related to how your camera behaves related to time based triggers are grouped under this menu item.

- 1) **Lapse Picture** – on, **OFF**
- 2) **Lapse Video** – on, **OFF**
 - a) **If On, Video Length*** – 5s, **10s**, 15s, 30s, 60s, 90s.
- 3) **If Picture or Video is On,**
 - a) **Interval** – 5s,15s, 30s 1m, **5 MIN**, 15m, 30m,1h
 - b) **Lapse Schedules** – **24 HOUR**, **Add Solar**, **Add Fixed**

Up to 5 start/stop periods can be defined. These can be assigned to different days of the week if desired (**S M T W T F S**).

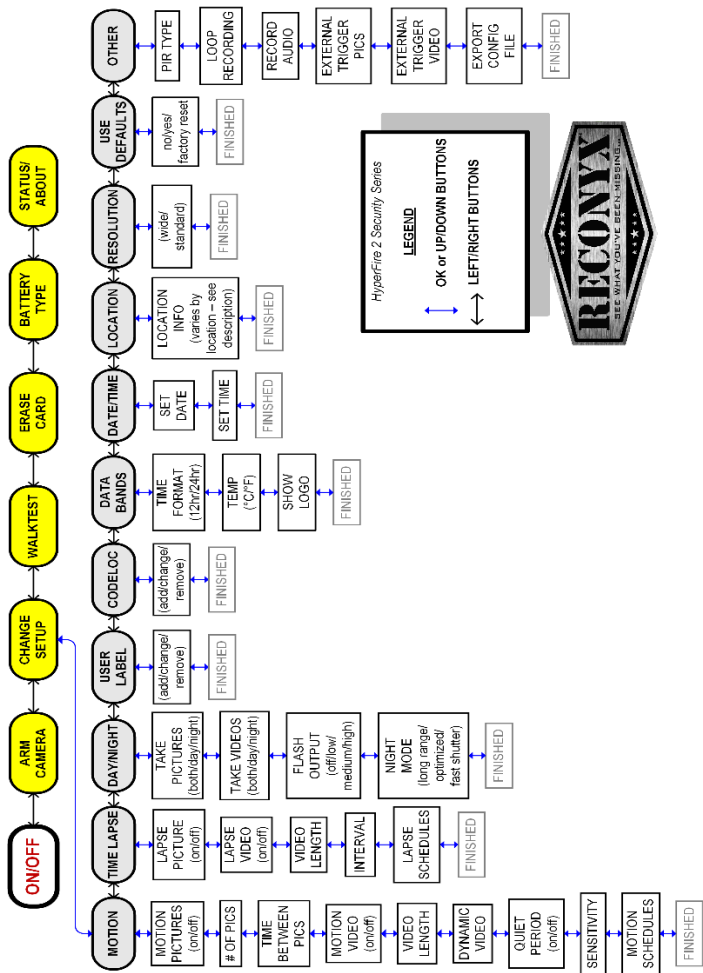
See description of Solar and Fixed schedules described above for Motion Schedules. They work the same way for Time Lapse, but you have independent schedules that can be defined for Time Lapse that are separate from your Motion Schedules.

* Videos longer than 10 sec will have reduced frame rates:15s@12FPS, 30s@6FPS, 60s@4FPS, 90s@2FPS). 30 second or longer night videos will have illuminator output reduced by 50%.

DAY/NIGHT – Select options relating to the camera's functionality with regard to taking photos/videos during day time and night time periods as well as select the best night time Infrared illumination options for your application.

- 1) **Take Pictures** – Day Only, Night Only, both **DAY & NIGHT**
- 2) **Take Videos** – Day Only, Night Only, both **DAY & NIGHT**
- 3) **Flash Output** – Off, low, medium, **HIGH** (HL2X is **Medium**)
- 4) **Night Mode** – Adjust the nighttime exposure (HL2X – **NA**)
 - **OPTIMIZED** – best combination of shutter speed and flash range
 - **Fast Shutter** - reduced motion blur, reduced flash range
 - **Long Range** – increased range, reduced image quality

HYPERFIRE 2™ Programming Diagram



USER LABEL - Add a label (up to 16 characters) that will be included in the data band of all photos and videos taken by your camera. You can also view, change, or clear an existing label.

CODELOC - Use CodeLoc™ to add a four-digit security code to your camera to prevent unauthorized use of your camera in the event of tampering or theft. You can also change or remove an existing code.

TIP: Write your four-digit CodeLoc™ code on the last page of this manual.

DATA BANDS – Set format for how time and temperature will be displayed on the data bands for photos and videos. Select Time Format (12 or 24 hours), and Temperature scale (FAHRENHEIT, Celsius).

DATE/TIME – Set the date and time. Up and down arrows change numbers, left and right arrows move between year, month and date. OK takes you to the time setting. Use up and down buttons to change numbers. Use left and right buttons to move between hours and minutes.

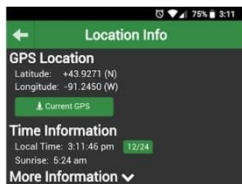
If you are an International customer and you have set your location information, when you change date/time, you will be prompted to validate your sunrise time.

LOCATION – USA or Other.

Users in the USA will be prompted for State/Territory, Time Zone (if your state crosses time zones), and whether you want the camera to Auto Adjust for Daylight Savings time. USA users will also be able to refine their location information to a specific Latitude/Longitude. This makes for more accurate Solar Adaptive Scheduling, and also allows the user the option of Geo-tagging their images with the specific Latitude and Longitude of the camera. By default Geo-tagging is turned off.

International users will be prompted for Latitude/Longitude, they will be asked whether they want to Geo-tag images, and they will be asked to validate Sunrise time for the current date. This information is required to enable Solar Adaptive Scheduling to function properly.

TIP: Go to your smartphone app store and download the RECONYX app. There is a Location button on the App that will give your exact Lat/Long info and will also report your local sunrise time for today's date.



RESOLUTION – Select picture and video aspect ratio. (**STANDARD**) or (**WIDE**). (HL2X defaults to **WIDE**)

TIP: *For HS2X, the Standard setting records full resolution pictures and videos. The Wide setting matches the aspect ratio of widescreen monitors or HD television sets. For HL2X settings are optimized for reading license plates, not for viewing on any particular device.*

USE DEFAULTS – (**NO**, Yes, Factory Reset). If you choose Yes, your settings will be reset to defaults (shown above in **RED CAPITAL** letters). Defaults will not reset your date, time, battery type or location information. If you choose Factory Reset, all of your settings will be reset to factory settings and your camera will re-boot as if it were the first time you powered it on.

OTHER

1) **PIR TYPE** – (**LONG RANGE**, HF Legacy) (HL2X – **NA**)

If you desire your HyperFire 2™ camera's motion detector to function the same as your 1st generation HyperFire camera's motion detector, choose HF Legacy.

2) **LOOP RECORDING** – (**OFF**, on)

Loop Recording allows you to run perpetually without ever filling a memory card. The camera will overwrite the oldest images once the card is full.

3) **RECORD AUDIO** – (**ON**, Off)

If you would like to record videos without audio, choose Off.

4) **EXT TRIGGER PICS** – (**OFF**, on)

If when you purchased your professional camera you chose to add the external trigger jack and cable option, and you would like the camera to take pictures in response to your external trigger, choose On. The number of pics and the interval specified under your Motion options will be used when the external trigger fires.

5) EXT TRIGGER VIDS – (OFF, on)

If you would like the camera to record videos in response to your external trigger, choose On. The video length specified under your Motion options will be used when the external trigger fires.

6) EXPORT CONFIG – (NO, yes)

If you would like to save the settings from one camera so that you can load the exact same settings on another camera, you can choose Yes to the Export Config option. This will create a folder on your SD card called RECONYX, and inside the folder will be a file called HF2SEC.CFG for the HS2X, and HF2LIC.cfg for the HL2X.

All of the settings will be saved for transfer from one camera to the next *except for location, date/time, and battery type*. These should be set on the individual camera and will not be overwritten by a configuration file.

If you insert this card into another HyperFire 2™ Security camera of the same type it will load the same settings onto that camera. Then if you want to program another camera, you can Export the Config again and transfer to another camera, and so on.

Alternately, you can copy the RECONYX folder and configuration file onto a PC and then simply copy the folder and its contents from the PC onto additional SD cards for programming numerous cameras.

TIP: *You can return to the Main Menu options at any time by simply pushing the “up” directional arrow button.*

Mounting Your Camera

Your RECONYX® HyperFire 2™ camera can be mounted to a RECONYX® Universal Camera Mount™ or a camera tripod by utilizing the threaded insert on the bottom of the camera housing.

The camera can also be mounted to a tree by using the adjustable webbing strap (shown below). You can secure the camera to a tree and lock it shut at the same time with an optional Python™ cable lock by Masterlock®. Simply thread the cable through the “Lock Tunnel” on the camera and then cinch in place around the tree or post.

Mounting Camera with Adjustable Webbing Strap (included)



We recommend that you mount your camera at the approximate height of your target subject, and then aim the camera straight out for the best chance of sensing motion in the active detection zone.

NOTE: It is highly recommended that you use a theft deterrent device such as a security box and/or a Python Lock™ by Master Lock® to help secure your camera against possible theft when it is in the field.

You can purchase HyperFire 2™ compatible mounts, theft deterrent cable locks and security enclosures at www.reconyx.com

Locking & Securing Your Camera

There are a number of options to securely mount your camera.

- 1) A Python™ cable lock by Master Lock® can be used by threading it through the Lock Tunnel in the camera and securing it to a tree or another object. This will prevent the camera from being opened or easily removed.
- 2) For increased security, RECONYX® offers a custom fit Security Enclosure for the HyperFire 2™ camera series. The Security Enclosure can be secured with either a padlock or the Python™ cable lock by Master Lock®.



HyperFire 2™ Security Enclosure



Python™ cable lock by Master Lock®

Aiming Your Camera

PIR Motion Detector

The Passive Infrared Motion Detector on your HyperFire 2™ camera is aligned with the camera lens to give you the best chance of capturing subjects that come into the field of view of the camera, while not triggering on subjects outside the view of the camera.

The motion detector can detect movement up to 100 feet (30 m) away. However, the detection range is dependent on the size and temperature of the subject (relative to ambient temp) as well as the speed at which the subject is moving.

The HyperFire 2™ Security camera's active detection zones are identical to the detection zones on the 1st generation of Hyperfire cameras (shown in red below). Camera aim is critical to maximize detection range. The default setting for PIR type is "Long Range". So by default your HyperFire 2™ camera will be a bit more sensitive to motion than your original HyperFire camera was. If you would like it to be identical, choose "HF Legacy" for PIR Type.



For the camera to trigger two things need to happen:

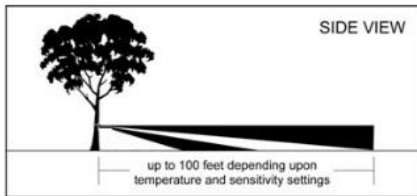
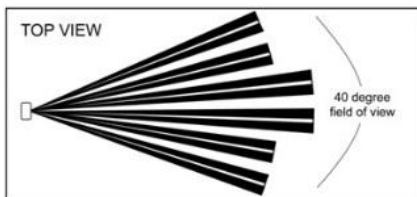
- 1) An object with a temperature different from the background temperature must be present within the field of view of the motion detector (shown in red) (i.e. something warmer or colder than the ambient temperature).
- 2) That object (with a temperature differential) must move horizontally within the active zone approximately 1/8th of the way across the field of view of the camera.

Using the “WalkTest” Mode

Learning to use the WalkTest mode is critical to being as successful as possible with your RECONYX® camera. The WalkTest mode allows you to precisely determine your camera’s active motion detection zone. This ensures that your camera is aimed exactly where you want to capture activity.

- 1) Secure the camera to a tree or other object aiming the camera toward where you want it to capture pictures.
- 2) Put camera in “WalkTest” mode and close the camera.
- 3) Walk in front of the camera where you expect to capture pictures. Every time the red WalkTest light blinks it indicates that a motion event has taken place. If the WalkTest light does not blink where you expect it to, adjust the aim or location of the camera.
- 4) If possible, set up the camera so that no large trees or objects are in the main field of view of the camera, as they can adversely affect motion detection as well as night time flash range.

PIR MOTION DETECTOR COVERAGE AREA



NOTE: All RECONYX® cameras will self-arm from the “WalkTest” mode after a two-minute period during which it does not detect any motion events.

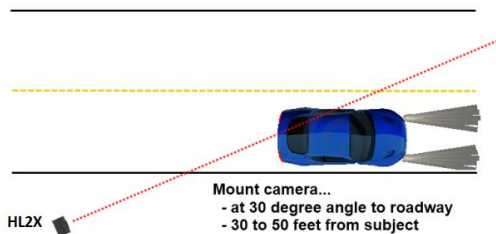
TIP: Be sure to use the “WalkTest” mode to be sure the camera is aimed correctly.

Aiming your HL2X Security Camera for License Plate Capture

The HL2X is designed to capture license plates effectively during both daytime and nighttime when run in default mode.

For best results...

- Position the camera approximately 5 to 10 feet from the edge of the road looking at the back end of cars passing in the close lane.
- Cars should be travelling at no more than 50 miles per hour if you want to reliably capture plates.
- The camera should be mounted about 24-30 inches high and have it aimed approximately 30 degrees off of parallel. The diagram below shows how you should set-up your camera.

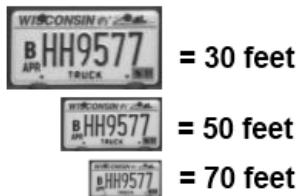


NOTE: Typical nighttime illumination range of the HL2X is 50 feet.

NOTE: The camera may also be mounted higher up on a pole (~10 feet) since most people do not often look up and therefore are less likely to notice the camera if it's mounted above eye level. However, wake-up time and the number of photos per vehicle may be reduced when mounted in this manner.

Plate Visibility at Various Distances

When setting up your HL2X, be aware that the further the camera is positioned from the subject, the smaller the plate will appear within the picture.



HL2X (License Plate Capture) Tips:

Use the "Walktest" mode to be sure the camera is aimed correctly. After setting your camera up, it is best to drive by yourself at various speeds to see how your camera will react to a moving vehicle. You may find that you need to adjust your aim slightly after testing.

We also offer a modified Cable Box for use in camouflaging your camera in urban/suburban settings when setting up to capture license plates.












The default mode for License Plate Capture is 5 still images in RapidFire mode. If you find that you do not get enough opportunities to read a plate in default mode, you can switch to 5 second videos with Dynamic length turned on. The videos record a series of still photos in a motion jpg with the same resolution as the still pictures. You get 5 frames per second in video mode, so typically you will get about 3 times as many images of a given vehicle. The downside to this is more storage space is used up for each vehicle, and videos are a little harder to view on a PC to see each frame.

The illumination is set to Medium output as default for the HL2X. Under most situations, this is a perfect setting. If, however, you have very close plates and you are getting "blow-out" on the plates, you can turn the illumination down to Low output. If you are set-up in such a way that plates are a little dim at night, you can boost the illumination output to High.

Image Data Information

Your RECONYX® HyperFire 2™ camera stores Image Data along with every picture it takes. Some of this information is displayed in Image Data bands above and below the image.



- An “**M**” or “**T**” in the top data band indicates a “motion” or “time-lapse” event. A “**D**” in the top data band indicates a “Dynamic Video” sequence. An “**E**” indicates an “external” trigger event.
- “**2/3**” indicates the second in a sequence of three pictures for that event.
- Moon Phases displayed include:  (new moon),  (waxing crescent),  (first quarter),  (waxing gibbous),  (full moon),  (waning gibbous),  (last quarter), and  (waning crescent).
- An “Illumination”  indicator appears in the Image Data bands, when the infrared illuminator is used.

Additional Camera Options

IR Mask

If you need to clean the IR Array window, the IR Mask™ is easily removed by carefully inserting a small screwdriver in one of the small slots and prying it out.

Warning! Be very careful not to scratch the IR Array window!

Step 1



Step 2



The windows covering the IR Array, lens, WalkTest indicator and light meter may all be cleaned with glass cleaner or water using a soft non-abrasive cloth.

To replace the IR Mask™, carefully line up one side of the IR Mask™ with the IR Array window. Then gently push on both sides until the IR Mask™ is completely seated against the window and snaps into both sides.

Troubleshooting

For answers to questions about your RECONYX® HyperFire 2™ camera that you cannot find in this *Instruction Manual*, please check the RECONYX® web site (www.reconyx.com).

Firmware Updates

You should also periodically check the RECONYX® web site for firmware updates for your camera. We periodically release firmware updates with new features and/or performance enhancements. Updating firmware on the HyperFire 2™ Series cameras takes just a few seconds and is well worth the effort to ensure your camera is performing at the highest level possible.

Limited Nighttime Range

If your nighttime range is less than expected, check to be sure you are using only recommended battery types, and that they are new or fully charged.

The physical camera setup is also important in getting good nighttime images. If you aim the camera out over an open field where there is nothing within range to reflect the Infrared energy back toward the camera, the images will appear very dark (like shining a flashlight into outer space). The best nighttime images will be captured when you have a backdrop of some sort that will reflect energy back toward the camera (e.g. trees, tall grass, fence, building, hillside, etc).

The other issue you may encounter with setup is that if you have an object near the camera that reflects a lot of IR energy back to the camera. The camera will optimize its exposure so as not to over expose this close object. This can result in what appears to be limited range. The solution to this setup problem is to either move the camera or remove the close object from the field of view of the camera.

Focus Problems

If your images appear cloudy or out of focus, first consider whether there was snow or frost on the camera windows. You may wish to check your camera after a fresh snowfall to be sure the windows are not covered with snow. Next, check the windows for dirt and water spots, and gently clean them with a clean soft cloth and glass cleaner or water. Image clarity can also be adversely affected by very high temperatures, so it is a good idea to mount your camera where it will not be getting direct sunlight during the heat of the day.

False Triggers

If you seem to be getting false triggers (i.e. the camera is taking pictures of nothing); first put your camera back to the default settings and try your camera again. This will ensure that you are running with known settings – with the motion detector ON at HIGH sensitivity and with Time-Lapse OFF.

If after going back to the default settings, you still seem to be getting false triggers, check the physical setup of your camera. The sun should not be shining directly on the face of the camera and the camera's field of view should be cleared of as much vegetation as possible. False triggers most often occur on sunny, breezy days. Vegetation will soak up the sun's energy and it will become warmer than the ambient air temperature. Then, when the wind moves the vegetation and warm air around, the camera sees this and cannot distinguish it from a warm-blooded subject moving in the scene. For this reason, careful placement and setup of your camera helps prevent false triggers.

Only as a last resort should you turn down your camera's motion sensitivity. This reduces your ability to detect movement of warm-blooded subjects, especially during the summer.

Camera Not Triggering

First, put the camera back to Default settings and try your camera again. This will ensure that you are running with known settings – it will set the motion detector ON at HIGH sensitivity. This is important, especially in the warmer months, because as the background temperature approaches the temperature of the target, the strength of the signal decreases and the range goes down accordingly.

If you are still having trouble, please refer to the “*Mounting and Aiming Your Camera*” section for detailed information, as well as using the WalkTest mode.

It is important to keep in mind that there are other factors that can also affect the ability of your camera to detect motion. Wind can have a detrimental effect. Body heat can be quickly dispersed away on a breezy day, making it more difficult for the camera to detect motion. Also, movement directly toward and away from the camera is less likely to trigger the camera than side-to-side movement. And, finally, if a subject is moving very slowly, it will sometimes not produce a strong enough signal within the sensor to trigger the camera.

Memory Card Problems

If your camera won't start up properly or displays a "card error, write lock", first check to be sure your card is not "Locked". On most SD cards there is a switch on the side of the card. If the card is locked, you will not be able to save any photos. If the card is not locked, but this message persists, you can attempt to clean the contacts in the card holder by blowing canned air into the card slot. This will often resolve the issue.



If you have other issues, you may have to try a different brand of memory card. We have found that some of the cheap memory cards are very slow and do not always run well (even if they are advertised as fast). RECONYX® certified memory cards are available at www.reconyx.com

Cold Weather Problems

If your camera shuts down in the cold, it may be too cold for the batteries. Refer to "Battery Specifications" for recommended battery types. Extreme cold weather does have an adverse effect on the LCD display; this does not inhibit the camera's ability to function; it just makes it hard to read the display.

Battery Life Less than Expected

NiMH batteries have decreased life in hot weather. They will run the camera, but they will have decreased run time. It is not unusual to see battery life drop off 50% or more when daytime temperatures are near 90° Fahrenheit or higher. This will not damage your NiMH batteries; their charge just runs down faster. If you notice that nighttime illumination decreases over time, you should change your batteries sooner, or switch to Lithium batteries.

Other Questions?

Please contact our Technical Support Department at 866-493-6064 or e-mail at support@reconyx.com.

Warranty, FCC, CE, IC, RoHS and Safety Information

RECONYX® 5 Year Limited Warranty

RECONYX® warrants this product to be free of manufacturer's defects in materials and workmanship for a period of 5 years from date of original purchase. If during this period, through normal use, the product fails due to defects in materials or workmanship, RECONYX® will either repair or replace the product at our sole discretion. This warranty is void if a product failure results from "acts of God", leaking batteries, accident, abuse, improper use, disassembly, or unauthorized maintenance and repair.

In order to qualify for your 5 year warranty, you must register your camera on our web site within 90 days of purchase. Go to www.reconyx.com/warranty to register your camera(s).

NOTE: There is a warranty seal on your camera; if this seal is broken or tampered with, the warranty is void.

RECONYX® Limited Software Warranty

Software products are licensed to the user under the terms of the applicable RECONYX® software license. If the user wishes to review the software license agreement, a copy of the software license is available at our website www.reconyx.com.

Repair or Replacement

Buyer must obtain a Return Authorization (RA) number from RECONYX® before returning any product(s) for repair or replacement. If RECONYX® concludes that a returned product is not defective, Buyer will be notified, the product will be returned to Buyer at Buyer's expense, and Buyer may be charged for examination and testing of the product.

This limited warranty is the sole warranty for hardware and software products offered by RECONYX® and RECONYX® shall not be liable for any amounts for said products except in compliance with this warranty.

FCC, IC, CE Certification

This device complies with FCC, IC, and CE requirements. Under part 15 of the FCC Rules, the operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This device has also been tested and found to comply with the emissions requirements of IEC 61000-6-3 and the immunity requirements of IEC 61000-6-1, and has been found to comply with the radiated interference requirements of Section 6.2 of the Industry Canada ICES-003 for Class B Information Technology Equipment (ITE).

RoHS Compliance

The European Union Directive 2011/65/EU Restriction of Hazardous Substances (RoHS) legislation restricts the use of certain substances in electrical and electronic equipment.

RECONYX® expends considerable effort in verifying material compliance to RoHS and certifies that the processes and materials used to manufacture assemblies are compliant.

Safety Precautions

Before using the camera, please ensure that you read and understand the following safety precautions. Always ensure that the camera is operated correctly.

The safety precautions noted in this guide are intended to instruct you in the safe and correct operation of the camera and its accessories to prevent injuries or damage to yourself, other persons, and equipment.

Preventing Malfunction

Avoid Strong Magnetic Fields

Never place the camera in close proximity to electric motors or other equipment generating strong electromagnetic fields. Exposure to strong magnetic fields may cause malfunctions or corrupt image data.

Avoid Condensation

Moving the camera rapidly between hot and cold temperatures may cause condensation (water droplets) to form on its external and internal surfaces. You can avoid this by placing the camera in an airtight, plastic bag and letting it adjust to temperature changes slowly before removing it from the bag.

If Condensation Forms Inside the Camera

Stop using the camera immediately if you detect condensation inside the camera. Continued use may damage the camera. Remove the memory card and batteries from the camera, open the camera in a warm dry environment, and wait until the moisture evaporates completely before resuming use.

Warnings

- Store this equipment out of the reach of children and infants.
- Do not allow water or other liquids to enter the interior of the camera. The interior has not been waterproofed. If the exterior comes into contact with liquids or salt air, wipe it dry with a soft, absorbent cloth. In the event that water or other foreign substances enter the interior, immediately turn the camera's power off and remove the camera batteries.
- Use of power sources not expressly recommended for this equipment may lead to overheating, fire, electrical shock or other hazards.
- Avoid using, placing or storing the equipment in places subject to strong sunlight or high temperatures, such as the dashboard or trunk (boot) of a car. Exposure to intense sunlight and heat may cause the batteries to leak, overheat or explode, resulting in fire, burns or other injuries. High temperatures may also cause deformation of the casing.
- **Be sure to check your state/local laws concerning the use of this product.**

Your Information and Camera Warranty Registration

Record Your Information

After you have familiarized yourself with this instruction manual, your camera, and software, you should record some basic information here so that you don't lose it. It is also a good idea to keep your purchase receipt in case you would need warranty work done on your camera.

Date Purchased: _____

Place of Purchase: _____

Camera Model & Serial #: _____

CodeLoc™ Password: _____

www.reconyx.com Login Info: _____

Register your Camera

Your new HyperFire 2™ camera is covered by a 5-year warranty. In order for the warranty to take effect, you must register your camera online within 90 days of purchase at www.reconyx.com/warranty

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