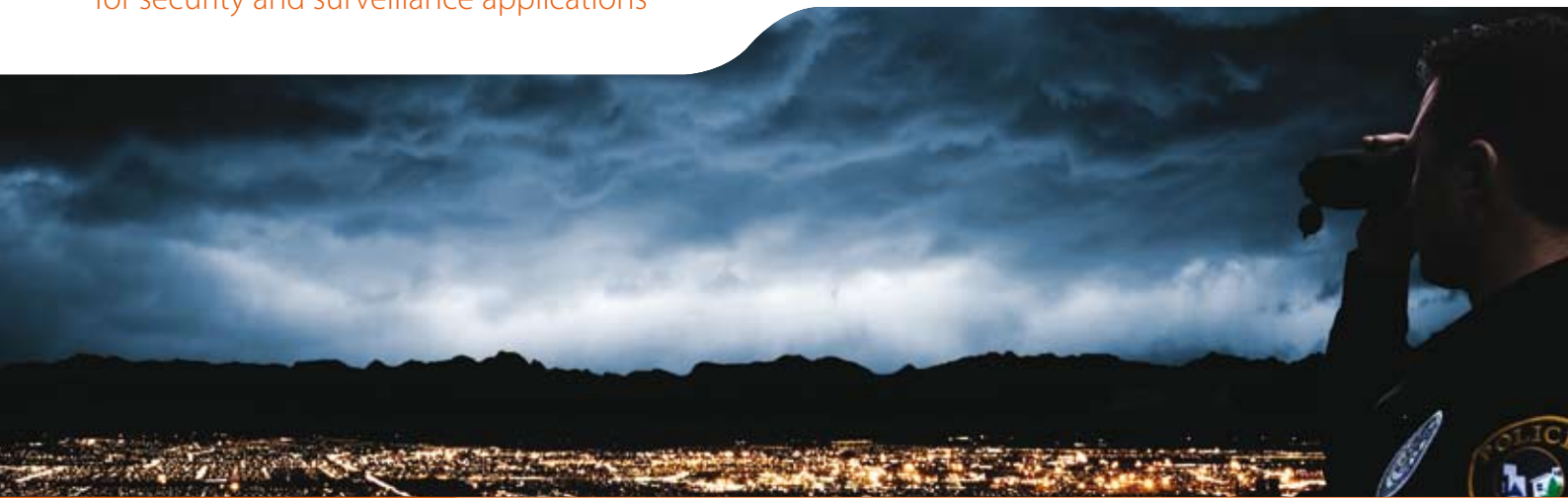


Thermal imaging cameras  
for security and surveillance applications



## H-Series

Portable thermal imaging cameras  
for security and law enforcement applications



*HS-324 with 2X extender*



*HS-324*



# Portable thermal imaging cameras for security and law enforcement applications



The H-Series are portable shock-resistant thermal imaging cameras. They produce a crisp image in the darkest of nights. Thanks to the H-Series, security professionals and law enforcement officers can see suspects in total darkness, through smoke, and light foliage.

The H-Series are excellent tools for walking patrols that need to secure industrial sites or borders, customs and law enforcement officers and all others that need to see what is happening in total darkness, in all weather conditions, without being seen themselves.

### Extremely affordable

The H-Series are extremely affordable units. From now on, everyone can afford thermal night vision. Price is no longer an issue. There is no need anymore to use less effective night vision technologies.

### Crisp thermal images

The H-Series produce thermal images of 320 x 240 pixels on which the smallest of details can be seen. Advanced internal camera software delivers a crisp image without the need for user adjustments.

### Choice of lenses

The HS-324 is equipped with a 19 mm lens providing a 24° field of view. It offers an excellent combination of range performance and situational awareness.

For longer range performance, the HS-324 can be equipped with a 2X extender which offers a 12° field of view.

Users that want to see farther can choose for the HS-307. Equipped with a 65 mm lens, providing a 7° field of view, it allows the user to spot a man-sized target at a distance of up to 1.5 kilometer.

### Digital zoom

A 2X digital zoom allows you to have an even closer look at the situation when necessary.



### Extremely portable and rugged

Weighing 660 grams, batteries included, the FLIR H-Series are extremely compact and extremely light systems. They are ideal for go-anywhere operations, in all circumstances. They are IP67 rated and operate between -20°C and +60°C.

### Easy-to-operate

Ergonomic and easy-to-use, the H-Series are fully controlled with just 5 buttons on top of the unit. Conveniently placed, all buttons are right underneath your fingertips.

### Ideal for covert operations

In operation, the H-Series are totally silent units. A shuttered eye-piece allows the operator to remain fully covert, in total darkness.

### Hot shoe

The H-Series comes standard with a "hot shoe" which can easily be mounted on the camera. The "hot shoe" has a power-in and video-out connection. This means that the H-Series can be fully operational on a tripod while charging the batteries.

### Long battery life

The H-Series have an operating time of over 5 hours on a single charge. They work on 4 rechargeable AA NiMH batteries. The H-Series can also run on standard commercial off the shelf non-rechargeable Alkaline or Lithium Ion AA batteries.

### Different versions available

Both the HS-324 and HS-307 are available in different versions:

The standard version of the H-Series contains all necessary features for covert surveillance. To see without being seen, in all weather conditions, in the darkest of nights.

The Pro version of the HS-324 and HS-307 comes with a number of useful features such as:

- *Image storage for evidence gathering:* Allows storing thermal images in JPEG format on a removable SD-card by the touch of a button. A 1 GB SD-card holds up to 20,000 images.

- *Video storage:* By holding a button, the Pro version of the H-Series has the ability to record full frame rate MPEG-4 video. The H-Series can record more than 2 hours of video on a 1 GB SD-card. This video can be used as evidence afterwards.
- *USB2 connection:* Can be used to transfer the saved images to a PC and to set the real-time clock.
- *Real-time clock:* Encodes the date and time on captured still images and video.





## H-Series:

# The power of thermal imaging in the palm of your hand

### 1 POWER button

Initial powering takes 60 seconds. Once on, the system is set to stand-by with a single quick press on the power button. The battery lifetime in this standby mode is more than 120 hours. Another quick press on the power button returns to ON mode. To preserve battery power in the "ON Status", auto stand-by is initiated if no buttons are pressed for 3 minutes.

### 2 RECORD button

Operational on the Pro version only. A single fast press of the RECORD button records a single frame of data to the SD-card. During this operation the image is frozen for approximately 1 second.

If the operator presses and holds the RECORD button for more than 2 seconds video recording is started and continued until the operator releases the button. During video recording a "record icon" is visible in the viewfinder.

### 3 ZOOM button

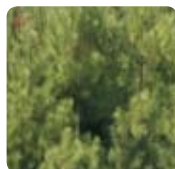
Each press on the ZOOM button cycles between 2X zoom and normal view. A zoom icon is presented in the viewfinder during zoom.

### 4 BLACK HOT / WHITE HOT button

Each press on the BLACK HOT /WHITE HOT button cycles between Black Hot and White Hot modes.

### 5 BRIGHTNESS button

Each press on the BRIGHTNESS button increments to the next of 5 display brightness levels. When the maximum display brightness is reached, subsequent button presses decrement the display brightness until the minimum brightness level is reached. Thanks to this adjustable brightness, you will be able to keep your night-sight capabilities.



### H-Series: also in broad daylight

The H-Series are not only excellent tools for spotting intruders in total darkness. Thermal contrast is extremely difficult to mask so people trying to camouflage themselves or trying to hide in bushes or shadows, will become immediately visible on a thermal image.



Law enforcement  
Customs  
Border security  
Surveillance

**6 Shuttered eye-piece**

Avoids light coming out of the viewfinder. It allows the operator to stay fully covert.

**7 Rugged design**

Ready for go-anywhere operations. In all weather conditions.

**8 Different lens options available**

According to your needs you can choose for the HS-324 with a 24° field of view or HS-307 with 7° field of view.

**9 Hand strap**

The H-Series have a hand strap on both sides of the camera for both left- or right handed use.

**10 SD-card slot**

The Pro version allows images and video, which can later be used as evidence, to be stored on a removable SD-card.

**11 USB2 connection**

Allows for fast transfer of images from the H-Series Pro to a PC.

**12 Battery compartment**

Contains 4 AA batteries.



nce

# Features and accessories



## Shuttered eye-piece

The H-Series have a bellows eye cup. It prevents light from coming out of the viewfinder, helping the operator to stay covert.



## Lens protection

A lens cap, able to open 180°, assures that the lens is protected when the H-Series are out in the field but not in use. It does not hinder the operator when the H-Series are in operation.



## Hot shoe

The H-Series come standard with a "hot shoe" which can easily be attached to the camera. It allows to charge the camera and connect the camera to a PC while the camera is mounted on a tripod.



## Extender lens

The HS-324 can be equipped with a 2X extender lens. It offers a 12° field of view for longer range performance.



## Car power adaptor

Both versions of the H-Series come standard with a car power adaptor to charge the batteries of the H-Series thermal imaging cameras on the road.



## Carrying bag

The Pro version of the H-Series comes standard with a robust carrying bag that protects the H-Series when out in the field.





# Thermal imaging versus image intensification (I<sup>2</sup>)

Image intensification, also referred to as I<sup>2</sup> technology, amplifies small amounts of visible light thousands of times so that objects can be seen at night. Image intensification does require a certain level of ambient light, but even starlight can produce an image on a cloudless night. Because the system requires at least a minimum level of ambient light, conditions such as heavy overcast can limit its effectiveness. Similarly, too much light may overwhelm the system and reduce its effectiveness.

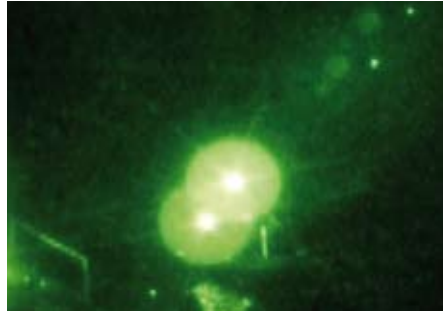


Image intensification: image is saturated by looking directly to a light source.



Thermal imaging: is not affected by the light and produces a clear image.

Thermal imaging cameras like the FLIR H-Series offer substantial benefits over image intensification. They work by detecting the heat energy being radiated and need no light at all to produce a clear image in the darkest environments. Thermal imaging cameras are not affected by the amount of light so that you will not be blinded when looking at a light source.

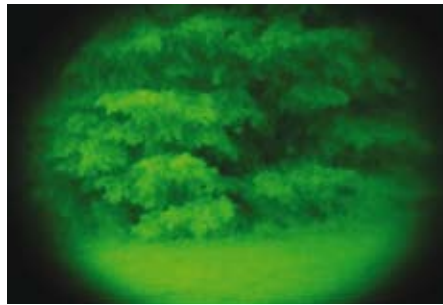


Image intensification: suspect hiding in bushes is practically invisible.



Thermal imaging: suspect hiding in bushes is clearly visible since thermal contrast is practically impossible to mask.

## A large number of applications

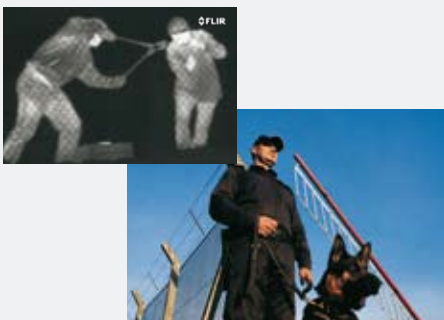
Thanks to the extremely affordable H-Series, more and more users can now benefit from the power of thermal imaging cameras.



A flashlight illuminates only a small part of the scene. It also makes you a potential target.

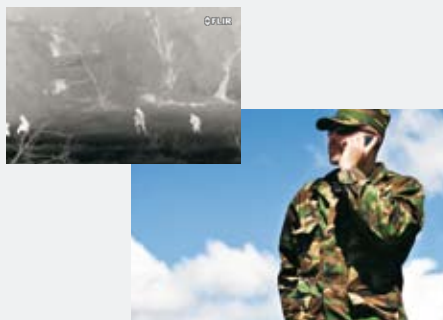


The H-Series gives you complete overview of the situation while you will stay fully covert.



### Security & Surveillance

Security patrols at ports, airports, nuclear plants, petrochemical facilities, warehouses, ... need to see in the darkest of nights.



### Border patrols

If a threat is detected, border patrols are sent to the scene to further evaluate the situation. Seeing clearly in total darkness is a considerable advantage.



### Law enforcement

Police, customs and other law enforcement officers want to see without being seen. Day and night.

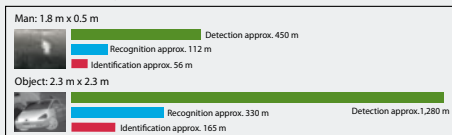
## Technical specifications

	HS-324	HS-307
<b>IMAGING PERFORMANCE</b>		
Detector type	Focal plane array, uncooled Vanadium Oxide (VOx) Microbolometer: 320 x 240 pixels	
Spectral range	7.5 to 13.5 $\mu$ m	
Field of view	24° (H) x 18° (V) with 19 mm lens	7° (H) x 5° (V) with 65 mm lens
Field of view with 2X extender	12.0° (H) x 9° (V) with 19 mm lens	NA
Thermal sensitivity	<50 mK at f/1.0 at +25°C	
Image frequency	8.3 Hz Pal / 7.5 Hz NTSC	
Focus	HS-324: Fixed - HS-324 with 2X extender and HS-307: Manual	
Electronic zoom	2X	
Image processing	Digital Detail Enhancement (DDE)	
<b>IMAGE PRESENTATION</b>		
Viewfinder	Built-in display - Color QVGA LCD	
Video output	NTSC or PAL composite video; RCA jack	NTSC or PAL composite video; RCA jack
Image Polarity	White hot / black hot; selectable	White hot / black hot; selectable
<b>POWER</b>		
Requirements	4 AA Batteries; rechargeable NiMH, non rechargeable Li-Ion or Alkaline	
Battery life	> 5 hours on NiMH batteries - 120 hours in stand-by with NiMH batteries	
<b>ENVIRONMENTAL SPECIFICATIONS</b>		
Operating temperature range	-20°C to +60°C	
Storage temperature range	-40°C to +75°C	
Humidity non condensing	5% to 95%	
Encapsulation	IP67	
Drop	Operational after 1 meter drop onto concrete	
<b>PHYSICAL CHARACTERISTICS</b>		
Camera weight incl. Lens and batteries	<b>HS-324</b> 660 grams	<b>HS-324 with extender</b> 970 grams
Camera size (L x W x H)	240 mm x 85 mm x 60 mm	265 mm x 85 mm x 75 mm
Shipping weight (camera + packaging)	2 kg	2 kg
Shipping size (camera + packaging) (L x W x H)	420 mm x 155 mm x 250 mm	420 mm x 155 mm x 250 mm
Shipping weight (2X extender + packaging)	-	The 2X extender is being shipped in a separate box of approx. 1 kg

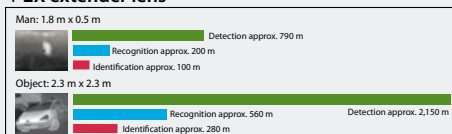
### PRO Version only

<b>IMAGE STORAGE</b>		
Format	Standard JPEG - 1 GB SD-card	
Storage functions	Single image	
<b>VIDEO STORAGE</b>		
Format	MPEG4 - 1 GB SD-card	
Storage functions	9Hz, full frame up to limit of SD-card, approx. 8 seconds / MB	
<b>INTERFACES</b>		
SD-card	1 slot	
USB2	Image transfer to PC	
<b>PHYSICAL CHARACTERISTICS (PRO)</b>		
Camera weight incl. Lens and batteries	<b>HS-324 Pro</b> 660 grams	<b>HS-324 with extender Pro</b> 970 grams
Camera size (L x W x H)	240 mm x 85 mm x 60 mm	265 mm x 85 mm x 75 mm
Shipping weight (camera + packaging)	3 kg	3 kg
Shipping size (camera + packaging) (L x W x H)	420 mm x 265 mm x 250 mm	420 mm x 265 mm x 250 mm
Shipping weight (2X extender + packaging)	-	The 2X extender is being shipped in a separate box of approx. 1 kg
<b>Standard Package:</b>	HS-307 or HS-324 handheld thermal imaging camera, 4 rechargeable batteries, hot shoe charging and video output attachment, Car power adaptor, Video output cable, AC charger, lanyard, manual	
<b>Optionally available:</b>	Extra for Pro Version: 1 GB SD-card, USB cable, carrying bag 2X extender ring (for FLIR HS-324 only), pelican case upgrade	

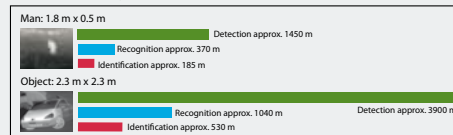
### HS-324: range performance 19 mm lens



### HS-324: range performance 19mm lens + 2X extender lens



### HS-307: range performance 65 mm lens



Actual range may vary depending on camera set-up, environmental conditions, user experience and type of monitor or display used.

#### Assumptions:

50 % probability of achieving objective at specified distance given 2°C temperature difference and 0.85 / km atmospheric attenuation factor.



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