



APPLICATION STORY



FLIR Scout thermal imaging cameras: a perfect tool for finding wildlife

Thermal imaging cameras see through darkness and ignore visual camouflage

Tools for detecting wildlife have evolved a lot in the last century. Binoculars are now quite commonly used throughout the world, followed by light amplifying nighttime vision systems that can be used to spot animals at night. Now there's a new wildlife detection tool on the market: the FLIR Scout TS-Series handheld thermal imaging camera.

Unlike all other nighttime vision systems thermal imaging cameras need no light whatsoever to produce a clear image. Many animals are mostly active at night, using the cover of darkness to remain undetected, but they will not be able to hide in the dark any longer if you have a FLIR Scout TS-Series handheld thermal imaging camera. All warm blooded animals will show up clearly in the thermal image, in total darkness and in practically all weather conditions.

Thermal imaging cameras are widely used by professional documentary makers and hunters worldwide. Until recently they were extremely expensive. With the TS-Series handheld thermal imaging cameras FLIR Systems is now bringing thermal imaging cameras within the reach of nature and wildlife enthusiasts and hunters.

First tests

The Swiss nature photographer and freelance wildlife journalist Michele Costantini was one of the first to receive a FLIR Scout TS-Series handheld thermal imaging camera for testing. He wrote a review of this new wildlife detection tool for the Swiss hunting magazine Jagd & Natur.

The rugged FLIR Scout TS32 Pro handheld thermal imaging camera provides crisp thermal images at a resolution of 320 x 240 pixels on which the smallest of details can be seen.



These four deer are easy to spot thanks to the InstAlert feature. Distance approximately 120 m.



Despite the heavy rain these young deer clearly show up on the thermal image at a distance of about 100 meters.



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This black hot thermal image shows two deer in the rut, distance about 60 meters.



Thanks to the InstAlert feature a buck (in the foreground) and a doe with fawn (background) clearly show up in the thermal image.

"Until a few years ago, a thermal imaging camera would cost more than a midsize car", explains Costantini. "In recent years, however, some affordable thermal imaging cameras have come on the market. Although the resolution of these thermal imaging cameras is lower than the resolution of most visual photo cameras, the high contrast image of a thermal imaging camera really is a great way to track game. With these devices you can see the outlines of animals and people very clearly even in total darkness and in light fog."

impossible to track or trace young deer – also called fawn – in hay fields, to name an example. With a thermal imaging camera, however, even the most camouflaged animals become visible to the observer."

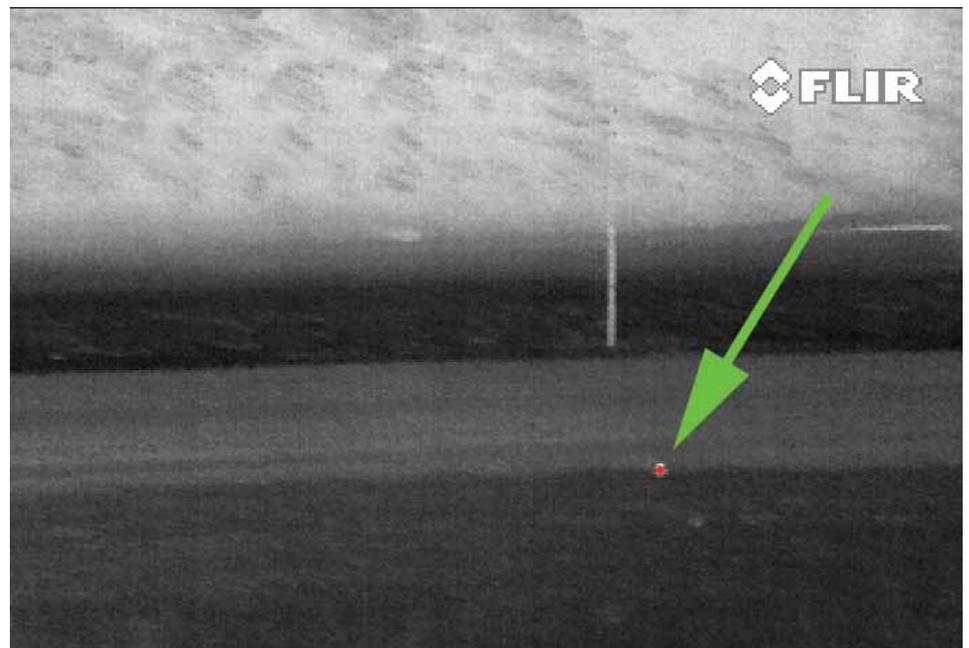
Also very useful during the day

Thermal imaging cameras from FLIR Systems provide unparalleled nighttime vision, but not only will the TS-Series handheld thermal imaging cameras help you to find animals in total darkness; they are also very useful during the day. Costantini explains: "Many species of animals have evolved to blend in with their surroundings, making them hard to find for hunters or wildlife enthusiasts. But if you use the FLIR Scout TS-Series handheld thermal imaging camera these camouflaged animals stand out quite clearly in the thermal image."

Costantini discovered that there's more wildlife in his area than he had expected. "Because most wildlife has very good camouflage many of them remain undetected if you use traditional means such as binoculars or light amplifying vision systems. As most hunters and wildlife enthusiasts know all too well it is almost



Even though these deer are huddled up closely, you can still distinguish the individual animals on the high contrast thermal image.



A hare in a beet field, at a distance of about 140 meters, is easily spotted thanks to the InstAlert feature.

Saving young animals from the onslaught of the mowing machines

This makes the FLIR Scout TS-Series thermal imaging camera especially useful, since every year young animals die when the mowing machines come to collect the hay, according to Costantini. "With a thermal imaging camera hunters and wildlife enthusiasts can more effectively find the young animals hiding in the hay and remove them from the danger zone before the mowing begins."

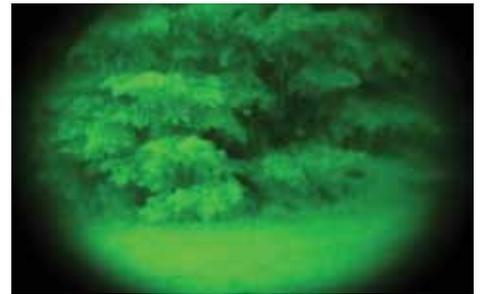
Like all thermal imaging cameras the FLIR Scout TS-Series handheld thermal imaging cameras rely on emitted heat instead of light to create an image. The thermal imaging detector records minute differences in the heat emission and the thermal imaging camera then translates that information into a visible image. The fact that it relies on thermal contrast instead of visible contrast means that thermal imaging cameras

will provide perfect vision even when camouflage or darkness render normal eyesight completely useless.

In his experience Costantini was able to spot just about every warm blooded animal with the FLIR Scout TS-Series thermal imaging camera he tested. "If you have a good viewing point you can find heat sources in meadows very quickly. And we found that not only warm blooded animals like cats and rabbits emit heat, ants and dung heaps also showed up quite clearly on the thermal image."

Designed for rough outdoors environments

The thermal imaging camera tested by Costantini was a FLIR Scout TS32 Pro with a 2x extender, provided by FLIR products distributor Pergam-Suisse AG. The small handheld thermal imaging camera contains an uncooled Vanadium Oxide



Light amplifying night vision system



Thermal imaging system

(VOx) microbolometer that produces crisp thermal images at a resolution of 320 x 240 pixels. Waterproof, compact, lightweight and shock resistant, this rugged piece of equipment is perfectly capable of coping with rough outdoor environments.

According to Costantini the FLIR Scout TS32 Pro is extremely easy to use. "The operation is very simple and almost completely self-explanatory. With only 5 buttons on top of the device all camera functions are controlled. All controls are practical and are within easy reach of the fingertips. They can be easily operated with gloves. The shuttered eyepiece ensures that the operator is covered in complete darkness because it prevents stray light from coming out of the viewfinder. This helps to avoid alarming the animals.

Different versions available

The TS Series is available in different versions. All of the rugged TS-Series handheld thermal imaging cameras produce thermal images of either 240 x 180 or 320 x 240 pixels. Advanced internal camera software called Digital Detail Enhancement (DDE) delivers a perfectly crisp image without the need for user adjustments. The unique InstAlert™ feature colors the hottest parts in the thermal image red, making it extremely easy to spot animals in the thermal image.

FLIR Scout TS-Series: Thermal imaging cameras for wildlife observations

The FLIR Scout TS-Series is a rugged handheld thermal imaging camera that has been especially developed for wildlife observations and hunters. Thermal imaging cameras need no light whatsoever to produce an image. They help you to see clearly at night, in practically all weather circumstances.

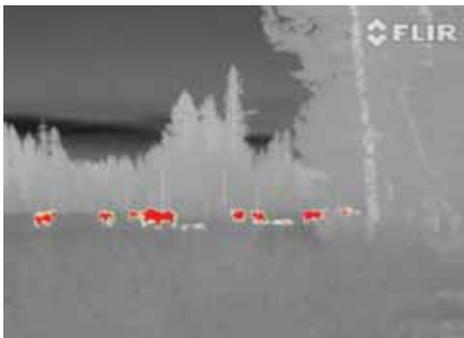


A lot of animals are mainly active at night. With the help of the FLIR Scout TS-Series thermal imaging camera you will be able to monitor their activities. The TS-Series will not only help you to find animals in total darkness but during daylight as well.

Thermal imaging cameras make extremely small temperature differences visible. Based on these temperature differences they create a clear image. Furthermore, thermal contrast is extremely difficult to mask. This means that during daylight you will clearly see animals that are hidden in trees or bushes. Their natural camouflage will not help them to hide anymore.



The FLIR Scout TS32 Pro handheld thermal imaging camera allows the user to choose whether the screen should show either white hot or black hot on the thermal image.



The unique InstAlert feature colors the hottest parts in the thermal image red, making it extremely easy to spot animals in the thermal image.

For each TS-Series thermal imaging camera there's a Basic and a Pro version. The Pro versions contain useful features: the thermal images can be saved on a removable SD card in JPEG format by pressing a button. In addition, the Pro-versions offer the possibility to record, video images in MPEG-4 full-screen mode. The USB2 port is used for direct transfer of images and video sequences on a computer for your own video or photo collection.

Excellent range performance

Most versions of the TS-Series thermal imaging cameras provide a field of view of 24°. This field of view offers an excellent combination of range performance and situational awareness. With a FLIR TS-Series handheld thermal imaging camera that has a resolution of 320 x 240 pixels a deer can be

spotted at about 450 meters away, in total darkness. For situations where longer range performance is needed a 2X extender is available. With the added functionality of the extender a deer can be spotted at approximately 790 meters. This was the version Costantini tested. "The version of the TS-Series I tested was well suited for detection of wild and in all weather conditions and in complete darkness."

If you need an even longer range performance, you can opt for the TS32r. This long range wildlife detection tool is equipped with a 7° lens. Due to this narrow field of view it can be used to spot a deer at about 1,450 meters away.

Hours of autonomous use

All versions of the TS-Series can function autonomously for 5 hours. They are equipped with 4 rechargeable batteries (NiMH), but replacing these with regular AA batteries is also possible.

The FLIR Scout TS-Series thermal imaging camera also comes standard with a "Hot Shoe". Not only does it allow for tripod mounting of the TS-Series, it also has a power in and video out jack. This means that you can put the TS-Series in an inconspicuous position and follow what is happening from a hidden location. Not only will this help you to remain undetected, it also allows you to follow what's happening on a large monitor, making it even easier to spot the animals you want to see.

According to Costantini the thermal imaging camera is particularly beneficial for hunting wild boars. "Boars can be detected quite easily at distances of over 500 meters. The thermal imaging camera alone is however not good enough as a shooting aid; you still need a good scope. But finding the well camouflaged wild boars is a lot easier if you have a thermal imaging camera."

Costantini thinks that during the day hunters or wildlife enthusiasts should still carry binoculars next to their FLIR thermal imaging camera. "If you rely solely on a thermal imaging camera, you might experience some unpleasant surprises. To put it simply thermal imaging cameras are extremely useful to spot wildlife and even



FLIR TS-Series handheld thermal imaging camera is a great investment for hunters and wildlife enthusiasts

differentiate which kind of animal it is, but to determine of what sex the animal is or what kind of health condition you still need binoculars."

For hunters the thermal imaging camera can be very useful after the shot has been fired as well. "Often the game isn't killed immediately and it will bolt away. Often it will die later on, but sometimes it is difficult to find due to the camouflage. I had such a situation with a fox when I was testing the thermal imaging camera. Using the camera I could find it within seconds lying dead in the neighboring meadow. Although a thermal imaging camera will never replace a good bloodhound, yet this application is certainly interesting, especially if you already have the thermal imaging camera with you anyway."

According to Costantini the FLIR Scout TS32 Pro with a 2x extender is one of the best thermal imaging cameras on the market. "I think it's a great investment for hunting parties and wildlife preservation organizations. It is very easy to use and I consider it to be one of the best methods for finding and saving young animals just before the hay harvest. The user has to be aware of the fact that these devices do not make binoculars and shooting scopes obsolete, but as wildlife detection tool it really is very good."

For more information about thermal imaging cameras or about this application, please contact:

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