



APPLICATION STORY



Dutch police uses FLIR thermal imaging cameras to spot criminals

Throughout history criminals have used the cover of night to commit crimes like burglary undetected. Today most acts of burglary still take place at night. To aid in detection of suspects the Dutch police department of Zaanstreek-Waterland deploys a new tool: thermal imaging cameras from FLIR Systems. "It really is a great tool for nighttime crime fighting", explains Vincent Bodifee, project leader traffic crime of the Zaanstreek-Waterland police department. "These thermal imaging cameras help us to see when our own eyesight is insufficient. Criminals will find it hard to hide from the all-seeing eye of the FLIR PathFindIR thermal imaging camera installed on some of our patrol cars."

Thermal imaging cameras record electromagnetic radiation in the infrared spectrum, which is emitted by all objects as a function of their temperature, and translates that into a visible image. The crisp thermal images provide excellent nighttime vision regardless of lighting conditions. A thermal imaging camera from FLIR Systems allows you to see clearly when darkness, smoke or light fog impedes normal vision.

As a test the Zaanstreek-Waterland police department installed FLIR PathFindIR thermal imaging cameras in a searchlight pan and tilt platform on the roof of two of the new VW Touran patrol cars. Within several months the use of the FLIR thermal imaging cameras led to arrests that would

not have been made without the aid of the FLIR PathFindIR thermal imaging cameras, according to Bodifee and his colleague Peter Van der Steen.

"We originally started the project with the FLIR PathFindIR thermal imaging camera to spot burglars at night", Van der Steen explains. "There was a wave of burglaries in our region, mainly by a gang which usually operates at night." The two initiators of the thermal imaging project hoped that the FLIR PathFindIR thermal imaging camera would help increase their chances of catching the burglars. "When we get a call that a burglary or similar crime is taking place we try to get to the scene of the crime as quickly as possible, but it is difficult to catch



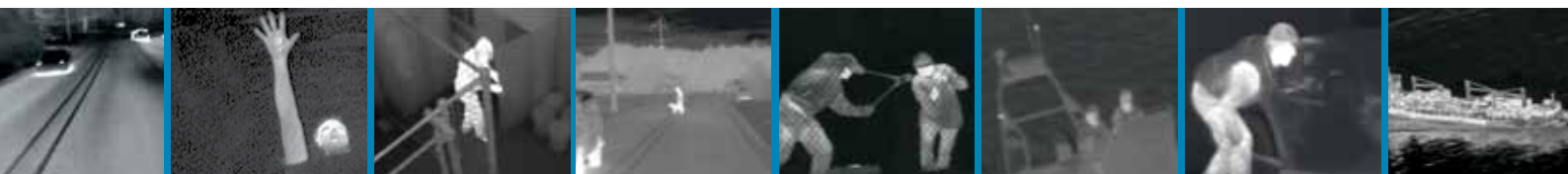
The FLIR PathFindIR thermal imaging camera is mounted in a pan and tilt platform for a searchlight.



The high contrast thermal footage is displayed on a TFT screen on the dashboard.



From left to right: Vincent Bodifee (project leader traffic crime), Gerard Havik (fleet technician) and Peter van der Steen (project leader car theft).



the perpetrator red handedly”, Bodifee adds. “Quite often the suspect goes into hiding as we approach. That is where this camera comes in handy.”

Seeing through darkness and camouflage

“We recently received had a call that someone was stealing hubcaps”, Bodifee continues. “The suspect was still in the area when we arrived, hiding in the bushes. The camouflage and darkness hid him from normal eyesight, but his warm body very clearly showed up as a bright white glowing silhouette in the thermal footage from the FLIR PathFindIR thermal imaging camera.” Bodifee is very happy with the camera’s performance. “Both people and vehicles show up clearly in the thermal footage. And in most cases distance is no problem either, for the FLIR PathFindIR has a range performance of several hundred meters.”

Excellent range performance

“One good example of the excellent range performance was a burglary case in Assendelft”, Bodifee continues. “We were looking for the suspects and when we crossed a highway overpass we noticed some white spots on the thermal footage from the FLIR PathFindIR. As it turned out the burglars had gone into hiding with their ill gotten gains in a nearby meadow. Using the FLIR PathFindIR thermal imaging camera we were able to point a police search team with dogs in the right direction and give further directions as they approached the location where the culprits were hiding. This clearly



The arsonist was apprehended, making it the first arrest made with the help of the FLIR PathFindIR thermal imaging camera.

illustrates the strength of this system, even at long range.”

The platform used to house the FLIR PathFindIR thermal imaging camera is a GoLight searchlight pan and tilt platform. The controls of the platform are installed next to the gearshift. “We already have that platform as an option in our cars with the searchlight inside, so it was an easy adaption to insert a FLIR PathFindIR thermal imaging camera inside the platform instead”, Bodifee explains.

FLIR PathFindIR cameras in BMW bumpers

The FLIR PathFindIR thermal imaging cameras are obtained from FLIR Systems distributor Honac Nederland and the installation in the searchlight platform is performed by the police department technician Gerard Havik. “It was Gerard Havik that originally came up with the idea”, Van der Steen says. “He had heard of FLIR PathFindIR thermal imaging cameras that are available with BMW cars as an optional extra. These are installed in the bumper for driver vision enhancement and added situational awareness. For our application we wanted to be able to turn the camera to survey the patrol car’s surroundings, so we decided to mount it in a pan and tilt platform.”

The thermal footage from the FLIR PathFindIR is displayed on a dedicated flat screen display on the dashboard. The PathFindIR thermal imaging camera incorporates an uncooled 320 x 240 pixels microbolometer. This maintenance free system delivers crisp video images which can be displayed on virtually any display that accepts composite video. Designed for use in harsh environments, the PathFindIR is extremely rugged. The PathFindIR is extremely compact (5.8 x 5.7 x 7.2 cm) and weighs only 360 grams, which makes it very easy to install and integrate any type of vehicle.

Arsonist in the river

The FLIR PathFindIR thermal imaging cameras soon saw action in a wide variety of cases. “The FLIR PathFindIR saw its first



The FLIR PathFindIR is easy to integrate in the electrical system of the patrol cars due to its compact and lightweight build and economic energy consumption.

use in an arson case”, Bodifee explains. “We were called in to assist with a boat fire. Some of our colleagues were already on the scene and they informed us that the suspect was probably still present in the area, and that six divers were searching the river. When we surveyed the area with our FLIR thermal imaging camera we counted seven people in the water. As it turned out the arsonist was hiding in the reeds of the river bank. The camouflage made him difficult to detect using regular vision, but he very clearly showed up in the thermal footage. This allowed us to quickly locate and arrest the suspect.”

“There is quite a long list of cases where the FLIR PathFindIR thermal imaging camera came in handy”, Van der Steen adds. “There was a case where we were asked to find drunken people gone missing near a busy road, a case with drunken people in a park that risked dying of hypothermia had our FLIR PathFindIR thermal imaging camera not spotted them and in another case we used it to catch graffiti sprayers red handedly.”

‘You have to see it to believe it’

“It really is an ideal tool for crime fighting”, Van der Steen concludes. “The amount of detail in the high contrast thermal footage from the FLIR PathFindIR is amazing. You have to see it to believe it. And the successes booked here at our department have also been noticed in other districts. Our colleagues from five other departments have also expressed interest in using this system.”



This thermal footage shows the arsonist hiding in the reeds at the river bank. The camouflage made him difficult to detect using regular vision, but he very clearly showed up in the thermal footage from the FLIR PathFindIR.



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