



APPLICATION STORY

HRC-Series

Thermal imaging cameras for ultra long range surveillance applications with cooled InSb detector

Protecting a country's border is vital to its national security. The FLIR Systems HRC-Series are a comprehensive range of advanced thermal imaging cameras that can help to achieve this. Some systems detect a man-sized target at 20 kilometers away: in total darkness, in all weather conditions.

HRC thermal imaging cameras

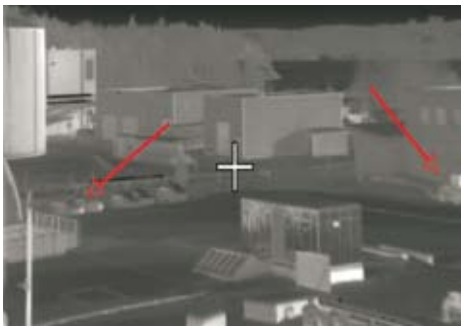
The HRC-Series are equipped with a highly reliable, mid-wave, cooled Indium Antimonide (InSb) detector which offers extremely long range detection in all weather conditions. The cameras offer a continuous zoom. This offers excellent situational awareness while also giving the possibility to zoom in at suspect activities, and have a closer look, once they are detected. The HRC-series can be integrated into existing networks or used portably.

The HRC-Series offer extreme long range detection and excellent image quality, in the darkest of nights, through smoke and dust. You can detect a man-size target several kilometers away. All thermal imaging cameras are extremely suited for border and coastal surveillance but also for mid-range threat detection.

All versions are also available as a Multi-Sensor systems. In this case they are combined with a daylight camera. Optionally a GPS unit, a Digital Magnetic Compass, a laser rangefinder and a tracker are available.

Crisp, high resolution thermal images: 640 x 480 pixels

All HRC-Series thermal imaging cameras are equipped with an InSb detector that produces ultra-sharp thermal images of 640 x 480 pixels. This will satisfy users that want to see the smallest of detail and are demanding the best possible image quality.



High contrast scene with standard AGC algorithm applied

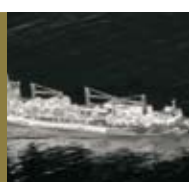
DDE applied - all targets can be observed simultaneously

It allows the user to see more detail and detect more and smaller objects from a farther distance. Coupled with high sensitivity, the HRC-Series offer extremely long range performance and excellent image quality.







Four different versions available

- **HRC-E** Equipped with a 22 x 275 mm lens. It zooms between a 25° field of view and a 2° field of view.
- **HRC-S** Equipped with a 39 x 490 mm lens. It zooms between a 14.1° field of view and a 1.1° field of view.
- **HRC-U** Equipped with a 59 x 735 mm lens. It zooms between a 9.4° field of view and a 0.75° field of view.
- **HRC-X** Equipped with a 88 x 1100 mm lens. It zooms between a 6.3° field of view and a 0.5° field of view.

Optical and digital zoom on the thermal image

The HRC-Series are equipped with powerful optical zoom capability on the thermal image. It offers excellent situational awareness but also the possibility to zoom-in, and see more detail, once a target has been detected. This way operators can see farther recognize more detail and react more quickly to security threats.

The advantage of zooming compared to other systems that are using a rotating lens system is that there is no switch or swapping between the different images. You can gradually zoom in while keeping your focus all the time.

All systems are also equipped with an up to 16x continuous digital zoom.

Advanced image processing

FLIR Systems has developed a powerful algorithm that helps to overcome the problem of finding low contrast targets in high dynamic range scenes. Advanced Digital Detail Enhancement (DDE) assures clear, properly contrasted thermal images. DDE delivers a high contrast image even in extremely dynamic thermal scenes. It provides high quality thermal imaging in any night- or daytime environmental conditions.

Multi-Sensors

The HRC-Series Multi-Sensor systems integrate the long range, short wave thermal imaging camera found in the HRC-Series with a variety of powerful daylight sensors, GPS and optionally a laser range finder. A tracker can be installed as well. An array of advanced functions and options are available to meet the most demanding needs. The Multi-Sensor systems are installed on a Pan & Tilt system to increase situational awareness.

FLIR Systems offers the Multi-Sensors in different configurations. The user can choose either an HRC-E, HRC-S, HRC-U, or HRC-X. Multiple options exists for the daylight camera as well. Depending on the needs of the user, the HRC Multi-Sensor systems can be equipped with a Short Range (SR-TV) or Long Range (LR-TV or UR-TV) daylight camera. The UR-TV is extremely suited for applications in which the HRC Multi-Sensor systems need to be mounted on a vehicle.

Although FLIR Systems specifies already three different types of daylight cameras, the user has the possibility to define his preferred equipment to be included in the camera. The same goes for the laser range finder, GPS and DMC

The following are just two possible configurations for the HRC Multi-Sensor systems.

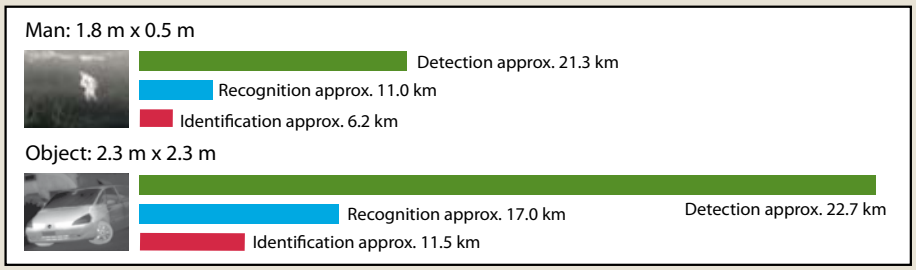
Multi-Sensor configuration:

- Thermal camera HRC-U
- Long range daylight camera (LR-TV)
- Robust Pan & Tilt
- TCP/IP electronics
- Digital magnetic compass
- GPS
- Laser range finder

Multi-Sensor configuration:

- Thermal camera HRC-S
- Short range daylight camera (SR-TV)
- Robust Pan & Tilt
- Laser range finder

HRC-X: range performance 1100 mm lens



HRC-Series equipped with a continuous optical zoom on the thermal image allowing to have a closer look at objects which are far away.

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

FLIR Commercial Systems B.V.
Charles Petitweg 21
4847 NW Breda
Netherlands
Phone : +31 (0) 765 79 41 94
Fax : +31 (0) 765 79 41 99
e-mail : flir@flir.com
www.flir.com

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