

Thermal imaging cameras  
for security and surveillance applications



## PTZ-35x140 MS / SR-35x140 MS

Multi-sensors with continuous zoom



SR-35x140 MS



PTZ-35x140 MS



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Multi-sensors with continuous zoom



SR-35x140 MS

Thermal camera 1 (20° field of view, 35 mm lens)

Thermal camera 2 (5° field of view, 140 mm lens)

Daylight / lowlight camera

TCP/IP compatible electronics

Connector (Mil Spec)

- RS-422
- Ethernet
- Video out
- Power



PTZ-35x140 MS

Thermal camera 1 (20° field of view, 35 mm lens)

Thermal camera 2 (5° field of view, 140 mm lens)

Daylight / lowlight camera

Pan/Tilt providing continuous rotation

TCP/IP compatible electronics

Connector (Mil Spec)

- RS-422
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## PTZ-35x140 MS / SR-35x140 MS

use the power of a thermal imager to protect your assets

*A thermal imager is a camera capable of detecting extremely small temperature differences. These temperature differences can be converted into a real-time video image. Displayed on a monitor, this video image is extremely well suited for night vision applications. Unlike other night vision systems that require low amounts of light to generate an image, a thermal imager needs no light at all. This makes it the perfect tool to see in absolute darkness; to see during the darkest night.*

### **Thermal imaging for security and surveillance**

FLIR Systems has more than 50 years of experience in the development and production of thermal imaging cameras for night vision applications. FLIR Systems continues to develop new thermal imaging cameras for new markets by successfully combining new technologies and high-rate manufacturing. Know-how, which was reserved for military and high-end scientific users only, has made its way to many more applications. An obvious application is night vision for security and surveillance.

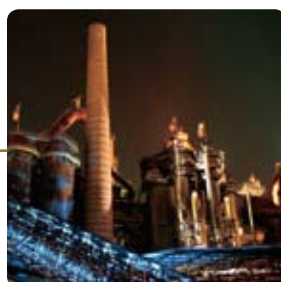
Thermal imagers are very effective for securing large open areas. Thermal imaging is invisible to intruders, allowing security personnel to monitor their actions without their knowledge, protecting people and assets before they are exposed to danger.

### **PTZ-35x140 MS and SR-35x140 MS: reliable instruments for security and surveillance applications**

The PTZ-35x140 MS and SR-35x140 MS are especially developed for security applications. They are powerful, multi-sensor, mid-range, thermal imaging systems. They feature two thermal imaging cameras and one daylight / low light camera. One thermal imager has a wide angle field-of-view and is ideal for situational awareness. The other with the narrow field-of-view is designed for mid-range target recognition.

The PTZ-35x140 MS and SR-35x140 MS allow you to detect objects, the size of a human being, more than 2 km away, in total darkness, through smoke, light fog and in the most adverse weather conditions.

The PTZ-35x140 MS comes with a fully integrated Pan/Tilt. It provides a full 360° viewing capability. The SR-35x140 MS is a fixed mounted unit. Once installed it is always looking at the same area.



Discover the PTZ-35x140 MS and SR-35x140 MS, specifically designed for security and surveillance applications



#### **Crisp thermal images - 320 x 240 pixels**

Both the PTZ-35x140 MS and SR-35x140 MS provide crisp, clear thermal imaging, in total darkness, smoke and light fog. This allows you to see more detail, detect more and smaller objects at further distance. Advanced internal camera software delivers a crisp image without the need for user adjustments. Both thermal imaging cameras provide high quality thermal imaging in any night or daytime conditions.

#### **Uncooled system**

Both thermal cameras integrated in the PTZ-35x140 MS and SR-35x140 MS use an uncooled microbolometer detector. An uncooled detector does not require a cryo-compressor cooler meaning higher versatility, lower maintenance cost and less downtime.

#### **Two thermal imaging cameras**

Both systems are equipped with two separate thermal imaging cameras. One has a 35 mm wide angle lens, the other has a 140 mm narrow field of view lens.

#### **Integrated long range daylight / low light camera with continuous zoom**

With the touch of a button you can switch between the infrared and the 2 Lux daylight / low light camera. It provides you additional information and identification when conditions permit. The daylight camera has an up to 26 times optical zoom. Displaying both the thermal image and the daylight image at the same time is also possible via Ethernet.

#### **Designed for use in harsh environments**

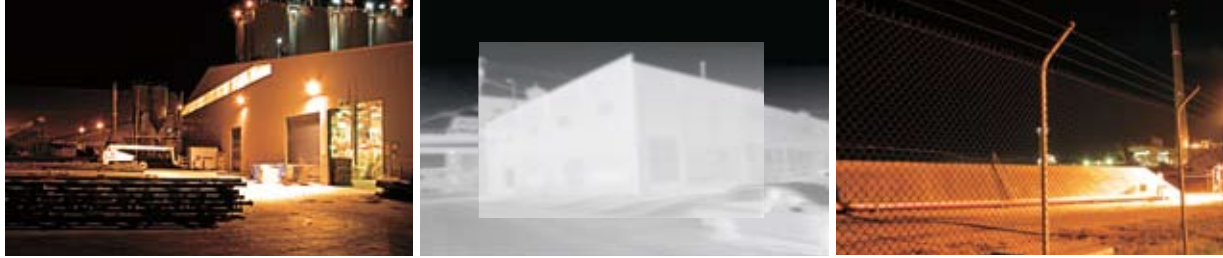
The PTZ-35x140 MS and SR-35x140 MS are extremely rugged systems. The cameras are well protected, IP66 rated, against humidity

and water. The corrosion resistant housing ensures long life. The PTZ-35x140 MS and SR-35x140 MS operate between -32°C and +55°C.

Both thermal imaging cameras have a built-in heater to defrost their protective window. This ensures a clear lens and perfect infrared images displayed on your monitor even in extremely cold environments.

#### **Different versions available**

- SR-35x140 MS:  
This is a fixed mount thermal imaging camera. Once installed, it is always surveying the same area.
- PTZ-35x140 MS:  
The PTZ-35x140 MS can continuously rotate 360° horizontally and tilt +/- 60° vertically. This way the operator can scan an entire area and look wherever he wants.



**Continuous zoom - Foveal View**

The PTZ-35x140 MS and SR-35x140 MS feature a completely new concept in image presentation based on the foveal vision of the human eye. Foveal vision allows the operator to enjoy a wide angle view for situational awareness while maintaining a high resolution area in the center of the screen for object identification and tracking. The PTZ-35x140 MS and SR-35x140 MS accomplish this with two independent thermal cameras and a unique patented image processing technique that provides both the foveal imaging mode as well as a continuous zoom between the wide and narrow fields of view.



- TCP/IP configuration:  
The PTZ-35x140 MS and SR-15x140 MS can be integrated in any existing TCP/IP network and controlled over a PC. No additional cables are required. Using this configuration, you can monitor all activity over the internet, even when you are thousands of kilometers away. A graphical user interface is available for controlling the system.



**PTZ-35x140 MS: mounted on robust Pan/Tilt for increased situational awareness**

**Fast, precision "Pan/Tilt"**

Intuitive joystick operation allows the operator to see 360° horizontal and +/-60° vertically, offering superb situational awareness. No special training is required to use the PTZ-35x140 MS.

**Radar Connection – "Slew to cue"**

The PTZ-35x140 MS can be connected by the integrator to a radar system. If the radar detects an object, the PTZ-35x140 MS will automatically turn in the right direction and give you a visual image so that you can instantly see what the blip on the radar screen really means.

Thanks to its precision, fast Pan/Tilt system, the PTZ-35x140 MS slews at up to 120° / sec. This means that within 1 second the head of the PTZ-35x140 MS will turn 120°. It allows for easy following of fast moving objects.

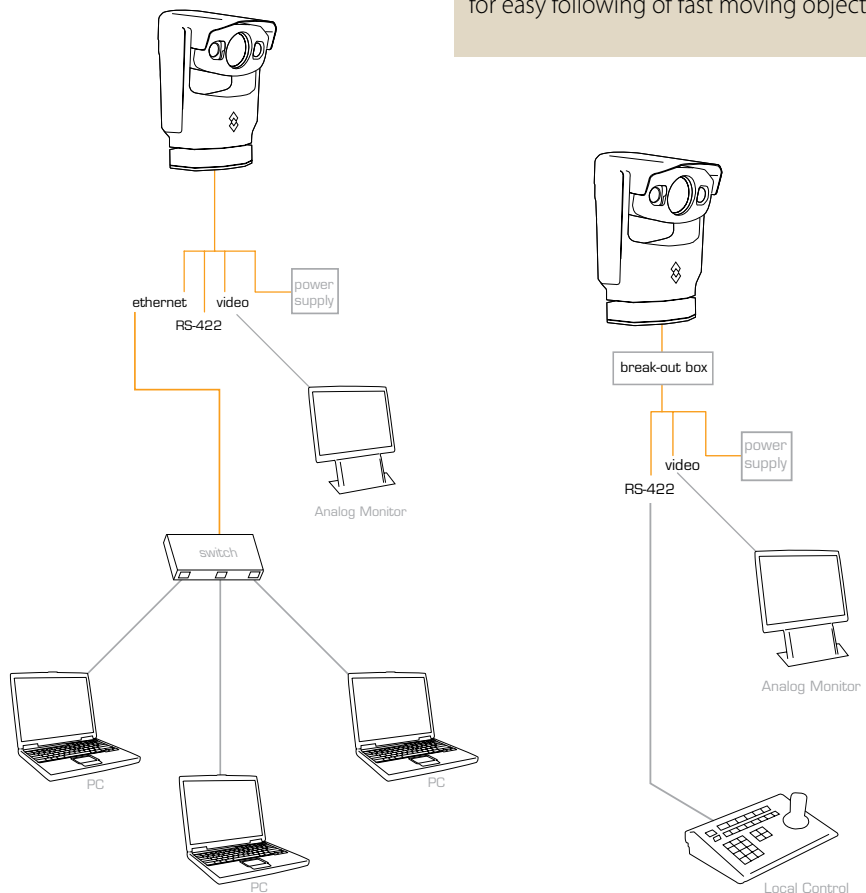
**Optional Software**

A Software Developers Kit (SDK) for integration in the TCP/IP network is available.

**Multiple installation options**

Various options exist to connect the PTZ-35x140 MS and the SR-35x140 MS and integrate them in your existing CCTV infrastructure providing early detection and visibility 24/7 all year round. They can be configured for stand alone use, as part of a network or in a hybrid configuration with local and network based control:

- Analog configuration:  
Simply connect the PTZ-35x140 MS or SR-35x140 MS over RS-422 to a remote control panel. PelcoD commands are used for common Pan/Tilt/Zoom functions. Two video cables can be connected to any existing multi-function display that accepts composite video. A graphical user interface is available.





## PTZ-35x140 MS and SR-35x140 MS: the perfect tools for security and surveillance applications

### **In complete darkness, in the most diverse weather conditions**

The PTZ-35x140 MS and SR-35x140 MS create a virtual security fence and are finding their way into many security and surveillance applications.



Nuclear plants, petrochemical installations, warehouses, ports and airports, ... they all are vulnerable to theft, or even worse terrorist attacks, and can be protected by using thermal imaging cameras like the PTZ-35x140 MS or the SR-35x140 MS.



Terrorism, vandalism, and random violence threaten the safety of personnel and the integrity of public and private facilities. A comprehensive security program utilizing thermal imaging cameras like the PTZ-35x140 MS or SR-35x140 MS is the key to asset protection and risk mitigation. The PTZ-35x140 MS and SR-35x140 MS expose threats hidden in the darkness, concealed by adverse weather, and veiled by obscurants like dust, fog, and smoke.



PTZ-35x140 MS and SR-35x140 MS offer advantages over low light and daylight cameras in applications where lighting is impossible, too expensive or long range performance is required. For border security, port security, and critical infrastructure applications, thermal imaging has proven vital to threat detection initiatives. Even with the best daylight or lowlight cameras, there are many situations where a thermal imager outperforms all other sensors.

The PTZ-35x140 MS and SR-35x140 MS are a new weapon for intrusion detection. They detect intruders sooner, provide more time to react and protect people, assets, and infrastructure. They are operational 24 hours a day even in the darkest of nights, light fog, snow and smoke.



### **Protect your assets also in broad daylight**

The PTZ-35x140 MS and SR-35x140 MS will not only protect your assets against intruders during the darkest of nights. They are also perfectly suited to complement your existing cameras during daytime. The PTZ-35x140 MS and SR-35x140 MS will detect objects that remain invisible for the naked eye. They are not affected by glare from the sun. The PTZ-35x140 MS and SR-35x140 MS will allow you to see through the glare, and detect possible intruders. Also people hiding in the shadows or in bushes, will be seamlessly detected by the PTZ-35x140 MS and SR-35x140 MS.





PTZ-35x140 MS

# PTZ-35x140 MS / SR-35x140 MS



## Technical specifications

### IMAGING PERFORMANCE

#### Thermal:

Detector type Focal Plane Array (FPA), uncooled VOx microbolometer 320 x 240 pixels  
Spectral range 7.5 to 13µm  
Number of fields of view Two thermal imaging cameras with foveally merged video  
Field of view camera 1 20° (H) x 15° (V) with 35 mm lens (NTSC)

#### Field of view camera 2

#### Spatial resolution (IFOV)

Thermal sensitivity 20° (H) x 16° (V) with 35 mm lens (PAL)  
Image frequency\* 5° (H) x 3.75° (V) with 140 mm lens (NTSC)  
Focus 5° (H) x 4.0° (V) with 140 mm lens (PAL)  
Electronic zoom 1.1 mrad for 35 mm lens - 0.27 mrad for 140 mm lens  
Image processing 65mK max  
Visual: Automatic or Manual  
Built-in digital video Foveal presentation: 20° to 2° HFOV  
Digital Detail Enhancement (DDE)

#### Effective pixels

Standard lens performance Sony FCB EX-980S 26x High Telephoto Zoom Color Block Camera (NTSC)  
Optical zoom Sony FCB EX-980SP 26x High Telephoto Zoom Color Block Camera (PAL)  
Electronic zoom Approx. 307,200 pixels  
26x Zoom, f=3.5mm (wide) to 91.0 mm (tele), F1.6 to F3.8  
up to 12 x

### PAN - TILT (PTZ-35 x140 MS ONLY)

Az Range; Az velocity 360° continuous, 120°/sec max.  
El Range; El velocity +/-60°, 120°/sec max.  
Slew Rate Speed tied to zoom.  
Accuracy <0.125° (2 sigma)  
Resolution <0.01°

### SYSTEM FEATURES

Automatic heater Clears ice from windows  
Built-in Test (BIT) Intelligent self diagnostics tests vital functions  
Programmable search PTZ-35x140 MS only: Programmable multiple preset scene locations with optional Software Developers Kit (SDK)

### IMAGE PRESENTATION

Video output NTSC thermal and visible - PAL thermal and visible  
Connector types BNC (1) provides active sensor video output (merged thermal or visible)  
VOIP RJ45 for network connectivity provided on break-out cable  
Streaming video via multicast MPEG4  
Simultaneous WFOV IR, NFOV IR and daylight TV

### POWER

Requirements 24 V DC or 24V AC (+/-10%)  
Consumption PTZ-35x140 MS: <50 W nominal; 130 W max; 270 W max w\ heaters  
SR-35x140 MS: <21 W Nominal, <25 W max; <100 W max w\ heaters

### ENVIRONMENTAL SPECIFICATIONS

Operating temperature range -32°C to +55°C  
Storage temperature range -50°C to +85°C  
Automatic Window defrost Yes  
Humidity Rain  
Sand/dust Mil-Std-810E  
Encapsulation IP66  
Shock Mil-Std-810E  
Vibration Mil-Std-810E

### PHYSICAL CHARACTERISTICS

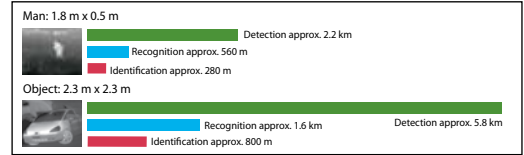
PTZ-35x140 MS  
Camera Weight 20.4 kg  
Camera Size 38.1 cm diameter x 58.5 cm height - swept volume  
Shipping weight (camera + packaging) 32 kg  
Shipping size (camera + packaging) (L x W x H) 85 cm x 59 cm x 41 cm  
SR-35x140 MS  
Camera Weight 7 kg  
Camera Size 22 cm x 25 cm x 30 cm

### STANDARD PACKAGE

Pan/Tilt or fixed mounted head with integrated thermal imagers and DLTV camera  
Break-out cable with standard mating connectors  
Operator manual

\* 30 Hz NTSC or 25 Hz PAL available. Subject to approval of the US Department of Commerce for use outside the USA.

### PTZ-35x140 MS / SR-35x140 MS: range performance 140 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.

### FLIR Commercial Vision Systems B.V.

Charles Petitweg 21  
4847 NW Teteringen - Breda  
The Netherlands  
Phone : +31 (0) 765 79 41 94  
Fax : +31 (0) 765 79 41 99  
e-mail : flir@flir.com

### FLIR Systems, Inc

CVS World Headquarters  
70 Castilian Drive  
Santa Barbara, CA 93117  
USA  
Phone : +1 805 964 9797  
Fax : +1 805 685 2711  
e-mail : sales@flir.com

### FLIR Systems Ltd.

United Kingdom  
Phone : +44 (0) 1732 220 011  
Fax : +44 (0) 1732 220 014  
e-mail : flir@flir.com

### FLIR Systems AB

Spain  
Phone : +34 915 73 48 27  
Fax : +34 915 73 58 24  
e-mail : flir@flir.com

### FLIR Systems AB

Sweden  
Phone : +46 (0) 8 753 25 00  
Fax : +46 (0) 8 753 23 64  
e-mail : flir@flir.com

### FLIR Commercial Vision Systems

China  
Phone : +86 10 5869 9786/8762  
Fax : +86 10 5869 8763  
e-mail : flir@flir.com

### FLIR Commercial Vision Systems B.V.

Dubai - United Arab Emirates  
Phone : +971 4 299 6898  
Fax : +971 4 299 6895  
e-mail : flir@flir.com

Your local dealer:



The PTZ-35x140 MS and SR-35x140 MS come with a break-out cable which splits up in separate parts: RS-422, Ethernet, Video out and power connectors. PTZ-35x140 MS: a 3 meter cable and a power supply are optionally available. SR-35x140 MS: a 12 meter cable and a power supply are optionally available.

A joystick to handle the PTZ-35x140 MS with Ethernet Control Console is optionally available.

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

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