

Ranger III & Ranger III MS

**High Performance, Long-Range
Thermal Security Cameras**



INTRODUCING THE FLIR SYSTEMS RANGER III

Thermal security camera with long-range, high-resolution surveillance capability

The best thermal security camera in the business

The FLIR Ranger III thermal security camera provides TV-quality thermal video for long-range, 24/7 video security applications. It is flexible enough to provide wide area coverage and long-range, high magnification performance. The Ranger III has three optical configurations to choose from: the LR 50x250mm, the XR 100x500mm, and the XR+ 150x750mm. Security operators can field the Ranger III as a portable stand-alone camera, or integrate it into a suite of plug-and-play sensors.



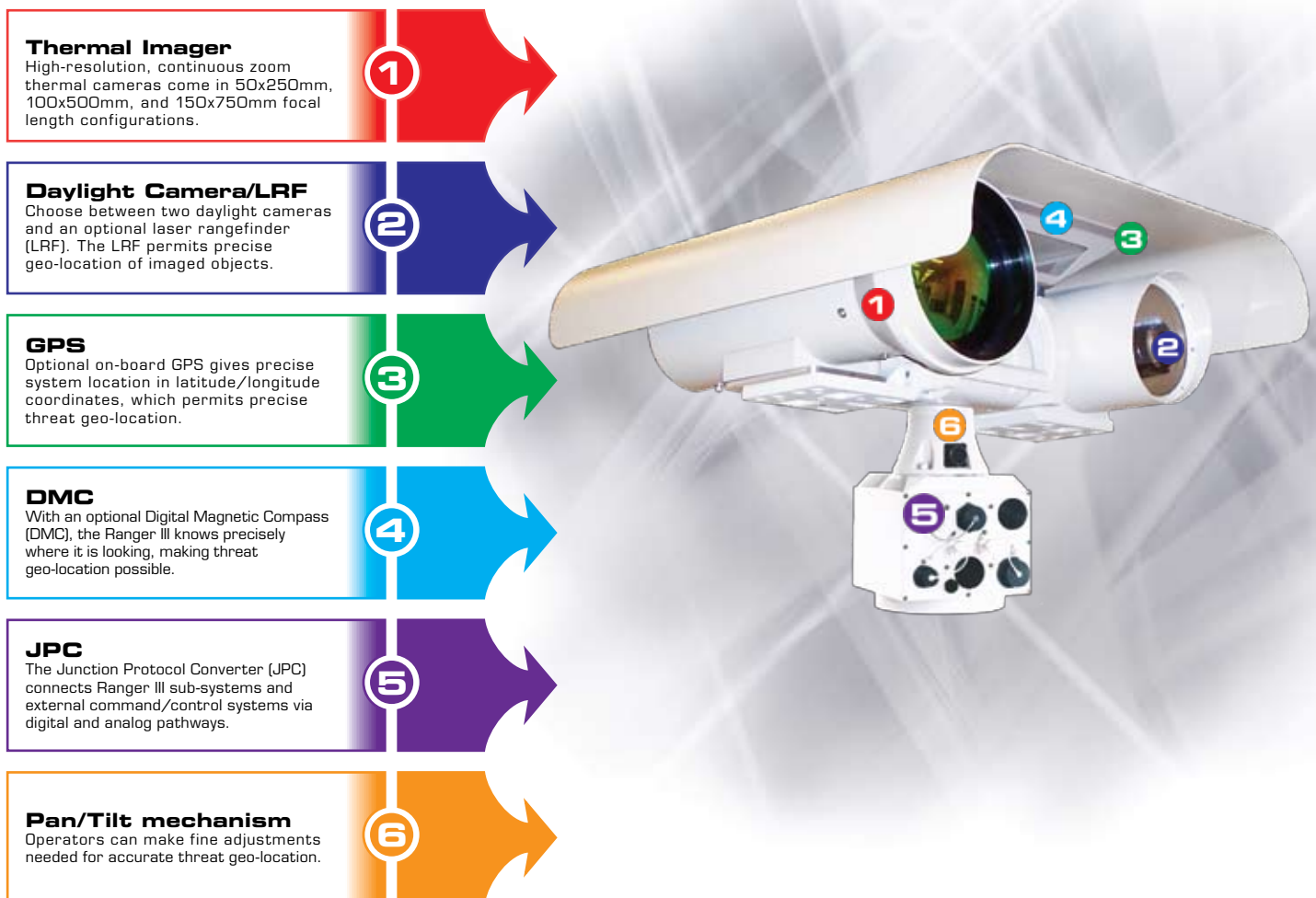
- High-performance, long-range thermal security camera
- 50x250mm, 100x500mm, and 150x750mm telescopes available
- Continuous optical & digital zoom for long reach
- Unmatched image quality with Digital Detail Enhancement (DDE)
- Network ready with IP control and MPEG digital video output available
- Pelco D serial control available
- Composite video output for use with video management and display systems
- Threat geo-location capable with built-in DMC, GPS & LRF (MS version)
- All-weather construction
- Backed by FLIR – the world leader in thermal security cameras

RANGER III MS - THE POWER OF THE MULTI-SENSOR

The power of ultra long-range thermal and visible surveillance coupled with geo-location capability

More than the sum of its parts

The Ranger III Multi-Sensor (MS) is a powerful, sophisticated multi-sensor system designed for demanding, extremely long-range security and surveillance applications. In its MS configuration, FLIR joins the Ranger III's high-resolution, continuous zoom thermal camera to a high performance TV camera with a long-range lens. Optional GPS, Digital Magnetic Compass and Laser Rangefinder payloads are also available. The combination of these sensors allows operators to precisely geo-locate objects of interest, and display their position as an overlay on a digital map. It is even possible to integrate Ranger III MS with radar systems to automatically direct the camera, and provide visual target assessment of the radar signature. The Ranger III MS offers control and compressed video over IP, as well as traditional analog video, and control with Pelco D, RS-232 and -422 serial formats.



SEE MORE, SEE FARTHER

Ranger III's high-resolution imaging capability lets operators see more detail from farther away

Maximum Detail

With FLIR's Ranger III thermal security camera, you'll see more detail from greater distances than ever before. Ranger III's 639x489 detector creates crisp, high-resolution thermal video, putting more pixels on target for extreme image detail at unbelievably long ranges.



Maximum Range

The FLIR Ranger III comes with a choice of three long-range telescopes: 50x250mm, 100x500 and 150x750mm. In addition to their 5:1 optical zoom ratio, both models have 2:1 & 4:1 digital zoom, giving you the ability to reach out to targets far beyond the capability of any other thermal security camera in its class.



Range Chart This chart shows you how far the Ranger III can detect and classify human and vehicle targets. These are approximate ranges; Ranger III's actual performance may vary, depending on a number of environmental factors.

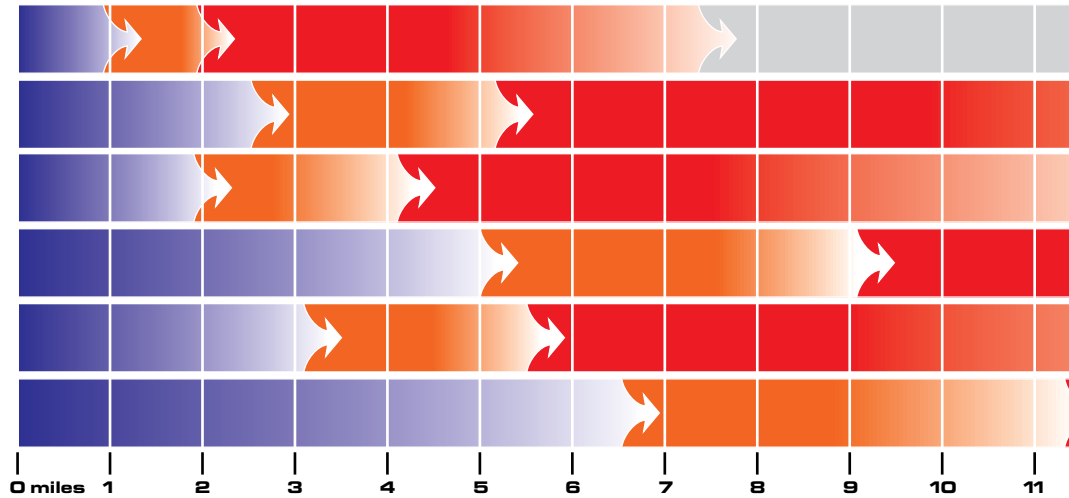
Ranger III LR



Ranger III XR



Ranger III XR+



IT'S ALL ABOUT RANGE

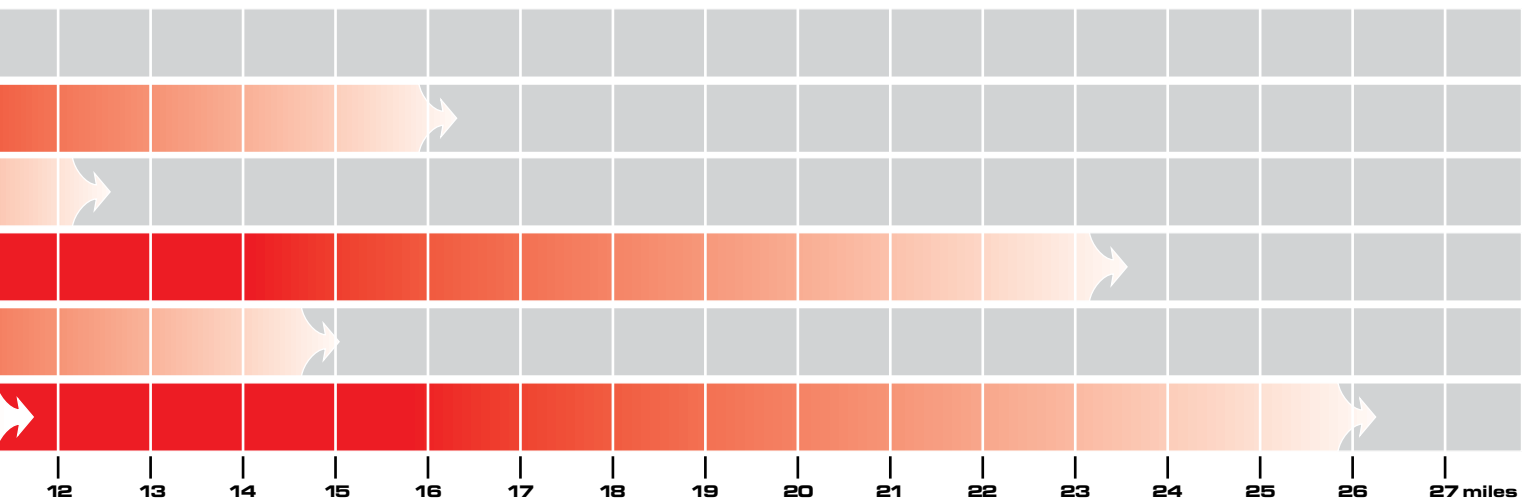
FLIR designed the Ranger III from the ground up with one purpose in mind: to be the best long-range thermal security camera on the planet

Ranger III - The best from the ground up

Not all long-range thermal security cameras are created equal. There are lots of factors that impact a thermal camera's ultimate range performance. Is the detector a high resolution 640x480 array or medium resolution 320x240 array? How big are the pixels? What is the focal length of the telescope? Were the detector and telescope designed to work together from day one, or are they unmatched assemblies from different vendors? Does the thermal camera offer FLIR's patent pending Digital Detail Enhancement? Does the thermal camera provide automatic focus and image adjustment? The Ranger III answers all of these questions to ensure maximum range performance.

- FLIR Systems designed and produced the Ranger III's thermal detector. It's high-resolution 640x480 format has 4-times the picture clarity of cameras that use medium format 320x240 detectors.
- The Ranger III high sensitivity detector pixels are 15 μ m in size. What does this mean to you? You can see more detail with Ranger III than with cameras that use detectors with larger pixels.
- The Ranger III has built-in Digital Detail Enhancement (DDE) video optimization algorithms. DDE is a proprietary FLIR technology that brings out unmatched image detail.
- Longer focal length lenses produce greater magnification, but just having a long telescope isn't enough – the lens and detector package must be designed and optimized to work together. FLIR Systems is uniquely capable of these complex tasks, as we design and manufacture all of the critical components in the imaging system: detector – cooler – video processing - lenses.

FLIR designed the Ranger III from the ground up so that all of its critical components work together towards one goal: making Ranger III the best long-range thermal security camera around.



APPLICATIONS FOR THERMAL IMAGING

Thermal security cameras compliment and complete your existing security network – you won't believe what you haven't been seeing

Border security

Thermal security cameras cover more territory with greater detail than any other sensor suite available. Networkable video and control make the Ranger III the perfect border security imaging solution.



Perimeter security

Airports, hydropower generation, refineries, chemical plants, and other large facilities have perimeters that can encompass miles of real estate. Ranger III's 24/7 multi-sensor network-ready coverage provides the ultimate security solution.



Long-range detection

Thermal energy travels through many atmospheric obscurants better than visible light. Through smoke, dust, even light fog, thermal security cameras are ideal for detecting activity at extreme ranges.



SUPERIOR IMAGE QUALITY FROM FLIR

Thermal scene detail you never thought possible

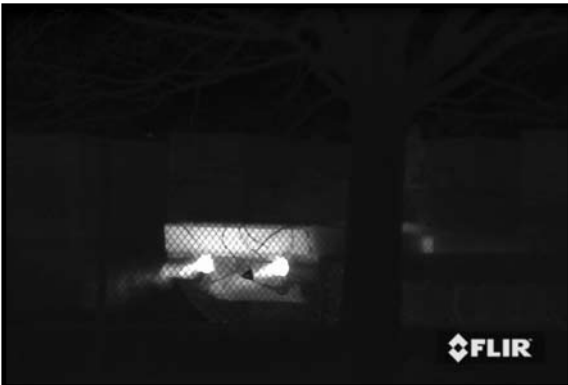
A new vision

Digital Detail Enhancement (DDE) is FLIR's proprietary image optimization algorithm that releases scene details normally hidden from view. Objects of interest are often lost in scenes with large contrasts in temperature. DDE brings them out, displaying them automatically with corrections no human operator could make. The image on the right has DDE on.



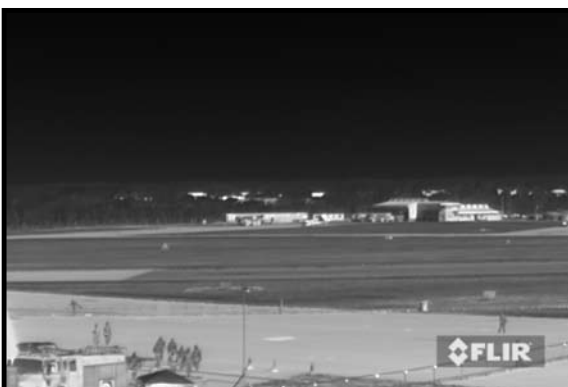
Seeing more than ever before

Beyond the capabilities of linear auto gain/level controls and even non-linear histogram equalization, DDE automatically provides system operators with buried image details without sacrificing image quality. The image on the right has DDE on.



5:1 Optical Zoom

Each model of Ranger III offers 5:1 zoom, plus 2:1 and 4:1 e-zoom for a combination of situational awareness and outstanding range – night and day, in good weather and bad.

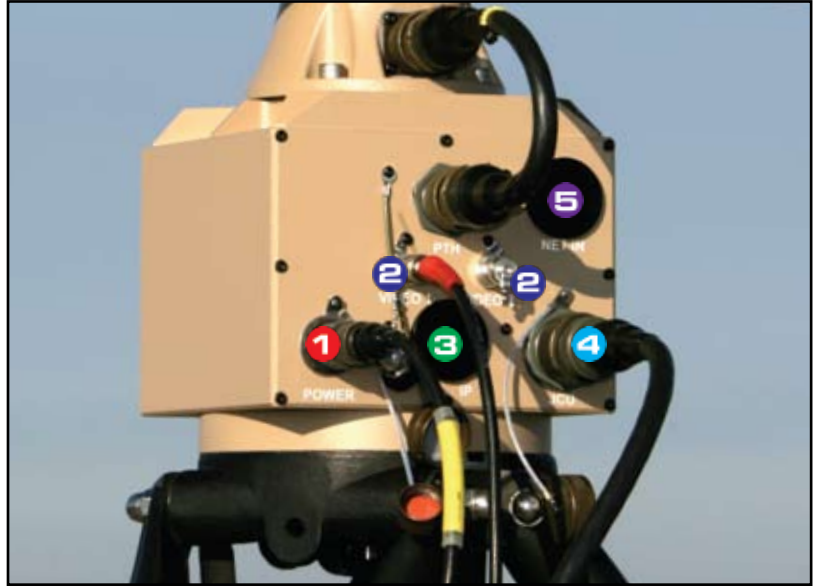
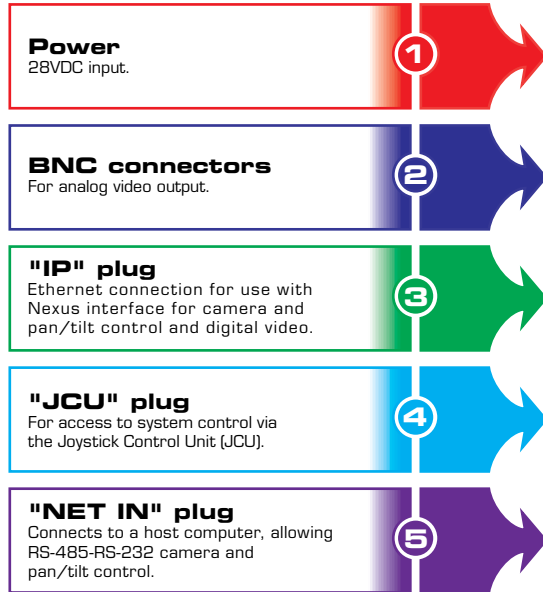


JUNCTION PROTOCOL CONVERTER FOR RANGER III MS CONNECTIVITY

Taking networkability to a whole new level

Analog and digital connections

The Ranger III MS thermal security camera comes ready for video and control over IP, as well as traditional remote control with RS-232, -485 and the Nexus software suite.

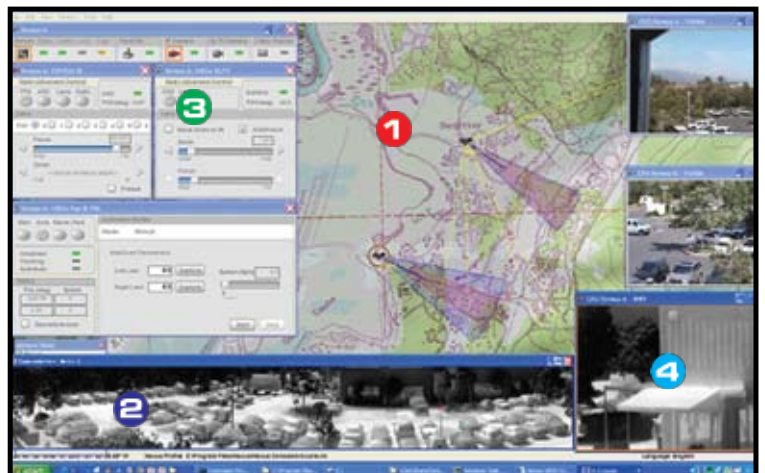
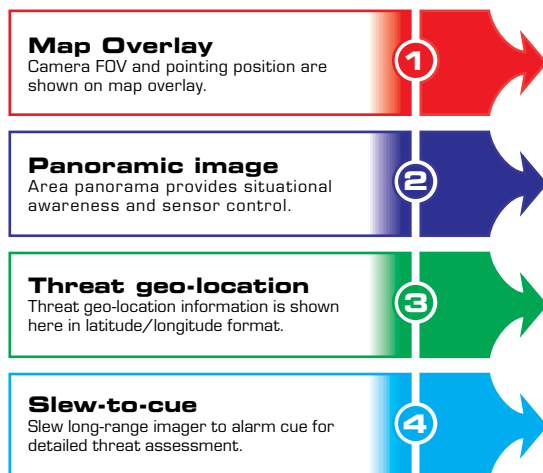


NEXUS

Network multiple cameras and multiple users to make your investment in thermal security cameras a truly integrated solution

Middleware solution

Nexus provides control of the entire security network. It features capabilities like plug-and-play control of FLIR's thermal cameras, inter-sensor slew-to-cue alarm response, geo-referenced situational awareness overlay and much more. Integrate Ranger III MS thermal security cameras with the powerful Nexus camera mapping, display and control software suite. The right choice for applications requiring display and control over the internet, Nexus allows system control over a laptop or other host PC, as well as outputting multiple video channels in mpeg4 format.



ABOUT FLIR SYSTEMS

FLIR is the world leader in thermal imaging technology

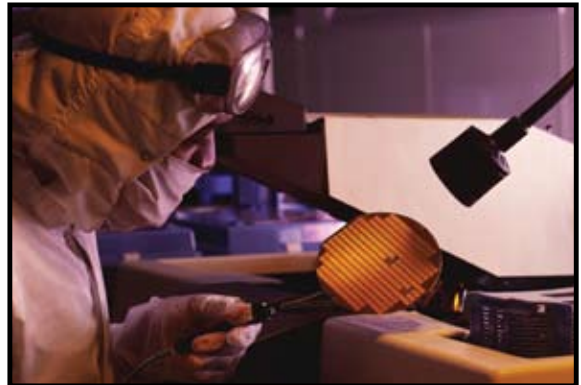
FLIR legacy

With thousands of systems fielded in military, scientific, law enforcement and security applications, FLIR offers unmatched experience and reliability to the security market. FLIR brings military hardened products to the security market at commercial prices.



Vertically integrated

FLIR designs and manufactures all of the critical technology inside our products, including detectors and special lenses, and it's all made here in the US. This ensures fast maintenance and support.



Volume production

FLIR thermal security cameras are mass-produced and can be found in a variety of applications including automotive vision enhancement, fire fighting and aviation. Our volume production allows us to extend lower prices to our customers.



SYSTEM OVERVIEW



Ranger III LR & XR



Ranger III XR+



Ranger III MS

CAMERA PERFORMANCE

Thermal Camera

Sensor Type	Indium Antimonide (InSb); 640x480 detector elements
Pixel Pitch	15µm
Spectral Range	3.4 - 5.0µm
Field of View Range: Ranger III LR	11.0° x 8.2° to 2.2° x 1.6°
Field of View Range: Ranger III XR	5.5° x 4.1° to 1.1° x 0.8°
Field of View Range: Ranger III XR	3.6° x 2.6° to 0.7° x 0.5°
Focus	Automatic or Manual
Electronic Zoom	2x, 4x
Image Processing	Digital Detail Enhancement (DDE); Histogram Equalization

Visible-light Camera (MS Option only)

Imager	JVC TK-C1460U
Field of View	28.7° (h) to 0.25° (h) @f3.8

LASER RANGEFINDER

Type	Eyesafe Erbium Glass, 1.54µm
Max Range	29 km

VIDEO OUTPUT

Format	NTSC or PAL
Connectors	2 BNC; simultaneous output of IR & TV video
MPEG Video	MPEG2 or MPEG4

SYSTEM SPECIFICATIONS

Mechanical

Field of Regard (FOR)	360° Continuous Pan; +/- 40° Tilt
Pan/Tilt Slew Rate	0° - 70°/sec Pan; 0° - 30°/sec Tilt
Position Accuracy	1 mrad

Power

Requirement	18-32 VDC
Consumption	35 W typical; 140 W with heaters (MS configuration)

Environmental

Operating Temp.	-26°F to +131°F (-32°C to +55°C)
Storage Temp.	-49°F to +158°F (-45°C to +70°C)
Ruggedized?	Per Mil-STD 810E
Built-In Test (BIT)?	Yes

SYSTEM SPECIFICATIONS (CONT'D)

Physical

Weight

Ranger III LR & XR (camera only)	22.0 lb (10 kg)
Ranger III XR+ (camera only)	28.5 lb (12.9 kg)
Ranger III MS (variant)	~46.0 lb (30 kg)

Size

Ranger III LR & XR (camera only)	22 x 9 in (D)
Ranger III XR+ (camera only)	22 x 9 in (D)
Multi-Sensor (variants)	15.6 x 11.8 x 8.9 in (397 x 300 x 226 mm) (LxHxW)

Interfaces

Command and control	RS-232/-422, PelcoD
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STANDARD EQUIPMENT

Ranger III LR, XR, & XR+	Ranger III thermal security camera, power supply, controller, breakout box, cables, Operator's Manual, shipping case.
Multi-Sensor Package	Thermal imaging camera, daylight camera, Pan/Tilt, Joystick, power supply with cables, Operator's Manual, shipping cases.

OPTIONAL ACCESSORIES

Laser Rangefinder, Global Positioning System receiver, Digital Magnetic Compass

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