



### Key Features

- Turn-key extreme long-range electro-optic surveillance system
- Multi-sensor, visible, cooled thermal, and IR illumination
- Cooled thermal: Up to 23km of human detection (40km vehicle)
- Germanium lens for thermal 50/250mm, 100/500mm, 150/750mm
- High resolution 1/2" or 1/3" true day/night camera
- 16-2000mm IR corrected motorized zoom lens with fog filter
- Colour by day, monochrome by night and 24/7 thermal
- Up to 5km ZLID IR illumination (syncs with zoom lens)
- Micro-Step technology for accurate pan/tilt better than 0.01°
- 360° continuous rotation with tilt functions and presets
- Rugged military grade IP 66 anti-corrosive treated enclosure
- Extreme weather -35°C to +60°C with defroster
- Options: Range finder, GPS, Slew-to-Cue, & auto tracking

### Overview

#### 24/7 Day/Night Surveillance

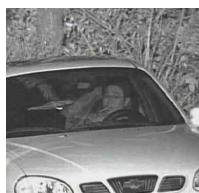
The SIG-3000M-2000-CT is designed by Ascendent specifically for critical infrastructure and perimeter protection. It offers a compelling alternative to the conventional single-camera system. The dual sensor payload enables the Sigma Series to provide images in virtually any environment from heavy fog to complete darkness. The FLIR cooled thermal imager provides long-range, wide-angle detection allowing proper assessment of potential hazards and threats at great distances with a high level of accuracy. The high-resolution visible camera provides superior clarity over thermal imaging and yields high detail to identify threats and trespassers even in complete darkness.

#### Visible Optical Zoom Camera

The Sigma Series PTZ boasts a 1/2" high-resolution visible camera that renders superb detail color images by day and clean, crisp monochrome images at night. This camera has a powerful 33-2000mm motorized zoom lens for FOV's ranging from 22° to 0.18° degrees and zoom ratio of 60X. The window is made out of 5mm optically pure flat tempered glass with AR coating to eliminate distortion and blurring that normally occurs, further enhancing the image clarity even when zoomed in. The OSD and coaxial controls allow you to configure the BLC, HLC, DIS, 3DNR, DIS privacy zones, and virtually every aspect of the camera to be optimized on site for unparalleled performance.

#### Active IR ZLID Laser Illumination

Many laser illuminators only light the center of the screen and act as a spot beam that over-exposes the center of the image and leaves the edges dark. Ascendent's laser has up to a 0.35° to 19° (43X) resulting in an illuminated scene that matches the FOV of the camera. Ascendent's ZLID (Zoom Laser IR Diodes) technology synchronizes IR intensity and area illumination with a motorized zoom lens for outstanding active IR performance, eliminating over-exposure, washout, and hot-spots for performance at distances ranging from 150m up to 5km (16,400ft) in complete darkness.



See Through Windows



Fog Filter @ 15km



Train @ 800m



Ship @ 3km



### Pan-Tilt Resolver

The heavy-duty PTZ driver is designed for extreme performance in the most demanding applications. It implements brushless motor technology for endless 360° panning and Micro-Step technology for precise (0.01°) pan and tilt positioning. Advanced features, such as preset and auto-cruise, will complement almost any existing equipment by means of Pelco-D and Pelco-P protocols.

### Intuitive and User Friendly

Although the SIG-3000M-2000-CT is an extremely sophisticated piece of equipment, it is operated by an intuitive, user friendly interface with multiple control options such as touch screen and mouse. It can also be controlled by a 3-axis joystick and operated by any individual without prior training. Additionally, the optional Image Stabilizer (IS) and fog filter helps eliminate the effects of vibration and waves giving the Sigma similar performance of a gyro-stabilized system at a fraction of the cost.

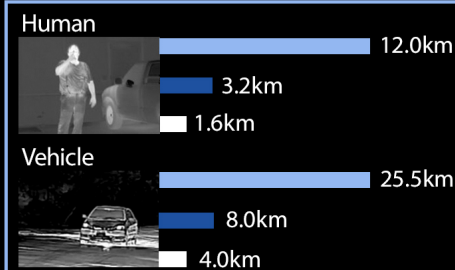
### Rugged and Robust

The SIG-3000M-2000-CT is comprised of military grade, precision engineered components and manufactured using unique processes to offer absolute performance. It integrates a military style connector to supply power, video, and communication over a single cable. The Sigma also does not require a junc-

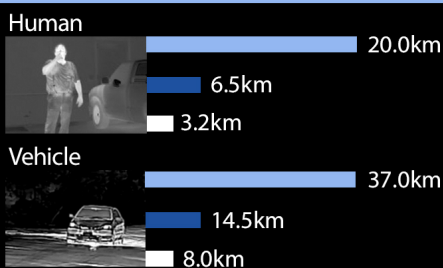
\* Actual range varies based on conditions, 50% chance of achieving performance at 2°C temp difference and 0.85/km atmospheric attenuation.

### Legend: Detection Recognition Identification

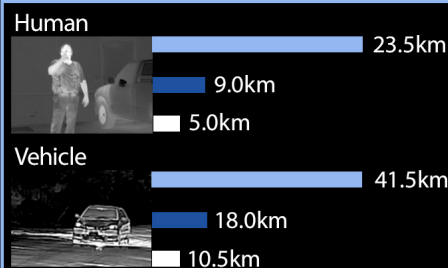
#### Ranger III LR 11° to 2.2° (50/250mm)



#### Ranger III XR 5.5° to 1.1° (100/500mm)



#### Ranger III XR+ 3.75° to 0.75° (150/750mm)



tion box or external electronics of any kind, increasing reliability and the amount of time required to install the system.

### Remote Connectivity (optional)

View all of your cameras and control them through the internet in real-time from anywhere in the world using Ascendent Remote Management Software (ARMS) on your laptop, iPhone, or Android device. Internet is often limited to low bandwidth satellites which is why our DVRs and IP cameras can record at one resolution, stream at another, and have integrated VBR and CBR to manage the amount of data and bandwidth used by each camera individually to ensure smooth operation on any network.

## Optional Accessories

Heavy-Duty Tripod



Wireless (1-50km)



Image Stabilizer



Rapid Deployment Kit (RDK)







## Thermal Camera

### Sigma Thermal

The integrated thermal detector Focal Plane Array (FPA) is based on a FLIR INsB cooled core that comes in a 640x480 resolution, with sensitivity of 25MK. Not only does the thermal core boast an impressive sensitivity, it also comes with a variety of precision engineered germanium lenses that offer a dual FoV up to 150 / 750mm (at 3.75° to 0.75°) for razor sharp images that maintain a low f-stop for real-time performance without lag and latency.

### Thermal Imaging

This cooled thermal imaging camera is equipped with an InSb detector, producing ultra-sharp thermal images of 640x480 pixels. This will satisfy users that want to see the smallest of detail and demand the best possible image quality. It allows the user to see more detail and detect smaller objects from a further distance. Coupled with a high sensitivity, and leading germanium optics, this camera offers extreme long-range performance and excellent image quality.

### Cooled InSb Detector

The integrated thermal camera is a 640x480 mid-wave, cooled Indium Antimonide (InSb) detector. A thermal imaging camera with a cooled detector allows you to see and detect potential threats much further away than with an uncooled detector. Objects which are at a close distance can be seen with much greater detail, you can even see what people are carrying. There is no need to send someone out in the field to check things out since small details can be clearly seen on the thermal image.



### Auto-Focus

The thermal camera contains an exclusive auto focus features, delivering crisp, clear images even when changing inbetween your FoV, ensuring optimal performance and situational awareness in the wide field of view and crisp details in the narrow field of view.

### Extreme Long Range Detection

The Sigma is a Long-Wave Infrared (LWIR) camera which means it operates on 3-5UM (3000nm-5000nm) wavelengths where terrestrial temperature targets emit most of their infrared energy. It has unparalleled performance and is able to detect humans at 23.5km and vehicles at 41.5km with the 150 / 750mm lens option, allowing one camera to replace many traditional cameras. While the Sigma is a significant investment, its multi-sensor design to deliver superior range and performance allows it to replace and outperform other solutions, making it an ideal option for a variety of applications.

### Digital Detail Enhancement (DDE)

FLIR has developed a powerful algorithm that helps the user overcome the problem of finding low contrast targets in high dynamic range scenes. This algorithm is called DDE. It is an advanced non linear image processing algorithm that preserves details in high dynamic range imagery. This detailed image is enhanced so that it matches the total dynamic range of the original image, thus making the details visible to the operator even in scenes with extreme temperature dynamics.





Specifications subject to change without notice

### Optical Assembly

Image Sensor	1/3" CCD Camera (HD optional)
Camera Mode	True Day/Night Auto Color / BW
Image Enhancements	BLC / 3DNR / DIS / Sens-Up
Motorized Zoom Lens	16mm~2000mm (120X w/ 2X)
Angle of View	17° to 0.14°

### ZLID Illuminator

Source	Class 3B 15W Laser 808nm
Beam (Syncs with lens)	0.35° to 19.5° (55X)
NOHD Distance	185M Max
Distance	185~4000m Max

### Thermal Ranger III

Germanium Lens (mm)	50/250mm (LR) 100/500mm (XR) 150/750mm (XR+)
Image Sensor	High sensitivity cooled InSb
Frame Rate	Real time 30 fps
Picture Elements	640 x 480 15μm (2X & 4X dynamic zoom)
Auto Focus	30' to ∞ with focus memory
DDE	Digital Detail Enhancement
Dimensions	7"(d) x 16" (l) [LR & XR], 9" (d) x 22" (l) [XR+]
Environmental Rating	IP 66, MIL STD 810F
Operating Temperature	-30°C to +55°C (-26°F to +131°F)

### Communications & Presets

Presets	
Preset Tours	4 preset tours (user defined)
Video	NTSC/PAL (IP optional)
Communication	RS485 / RS422
Control Protocol	Pelco D/P Extended (others optional)

### Pan Tilt Driver

Drive Unit	50kg load, worm drive
Pan Angle and Speed	360° continuous pan   variable speed up to 20°
Accuracy	0.01° Micro-Step
Proportional Speed	Adjust speed with zoom

### Physical

Construction	Aluminum alloy IP 66
Temperature	-40°C~60°C
Treatment	Anti-corrosive coating / temperature: -40°C~60°C

### Options

Range Finder	1~25km (digital compass & GPS)
High Resolution Pan/Tilt (Viper)	0.005° (0 backlash), up to 300°/sec
Auto Tracking	2x2 pixel auto target tracking (requires Viper HD)
Slew-to-Cue	Radar integration