



Key Features

- Turn-key extreme long-range 24/7 surveillance system
- Dual sensor, active IR camera with thermal imaging
- Synchronized laser and optical zoom for maximum illumination
- Thermal camera provides 8.8km of vehicle detection
- 5km of active IR night vision with Zoom Laser IR Diode
- 16-2000mm IR corrected 3CCD motorized zoom lens
- 1/2" infrared high sensitivity color and B/W camera
- Double IR cut filter for true day/night operation
- Photosensitive for auto switching between day/night modes
- Micro-Step technology for accurate pan/tilt better than 0.01°
- 360° continuous rotation with tilt functions
- Rugged military high strength IP 66 enclosure
- Extreme weather -35°C to +60°C rated

Overview

24/7 Day/Night Surveillance

The SIG-5500M-2000-TI 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 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

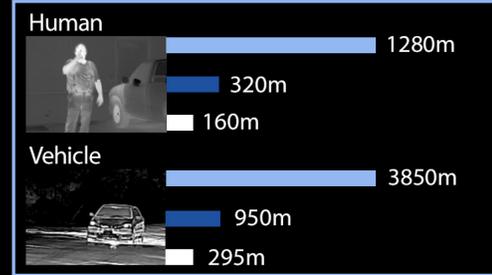
Although the SIG-5500M-2000-TI is an extremely sophisticated piece of equipment, it is operated by an intuitive, user friendly interface with multiple control options such as touch screen and mouse. It can also be controlled by a 3-axis joystick and operated by any individual without prior training. 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

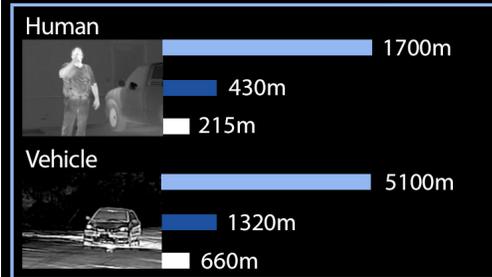
The SIG-5500M-2000-TI is comprised of military grade, precision engineered components and manufactured using unique processes to offer absolute performance. It integrates a military style connector to supply power, video, and communication over a single cable. The Sigma also does not require a junction

Legend: Detection Recognition Identification

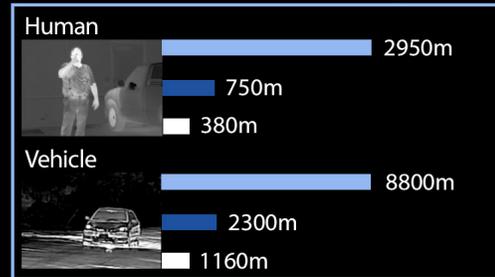
35mm Lens 320x240 Imager



50mm Lens 320x240 Imager



100mm Lens 320x240 Imager



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

3-Axis PTZ Controller



IP Pro Video Server



Image Stabilizer



Mobile DVR





Thermal Camera

Sigma Thermal

The thermal detector Focal Plane Array (FPA) is based on a FLIR VOX core that comes in 2 resolutions, a 336x240 and a 640x480, with sensitivity of 50MK at f/1.0. Not only does the thermal range boast an impressive core, it also comes with a variety of precision engineered germanium lenses ranging from 9mm to 150mm for razor sharp images that maintain a low f-stop for real-time performance without lag and latency.

Feature Packed

To further enhance image clarity the Sigma has FLIR priority noise reduction, to increase contrast, and 2X and 4X digital zoom to enhance even the most minute details. The cores have integrated solar protection and self heal from damage caused by direct sunlight. The Sigma thermal has a variety of image enhancements such as BPR, NUC, and AGC'd.

Thermal Imaging

Thermal cameras, unlike traditional visible cameras, use heat rather than light to see an object, giving them a huge advantage over other imaging technologies. Using minute differences in Infrared Radiation (IR) they produce a high contrast thermal image in complete darkness. It is unaffected by bright light and has the ability to see through obstructions such as smoke, dust, and light fog. This makes thermal ideal for a number of applications including but not limited to surveillance & security, search and rescue, fire, marine and land navigation, machine vision, and wide area situational assessment.

See It All

Everything above absolute zero (-273°C) emits thermal IR radiation. The Sigma thermal camera converts this into a digital image that can be displayed, distributed, and recorded. Humans, animals, and vehicles are very hot in contrast to a background and trespassers hiding in shadows or bushes are easily spotted.

Extreme Long Range Detection

The Sigma is a Long-Wave Infrared (LWIR) camera which means it operates on 7-14UM (7000nm-14000nm) wavelengths where terrestrial temperature targets emit most of their infrared energy. It has unparalleled performance and is able to detect humans at 2.9km and vehicles at 8.8km with just a 100mm lens allowing one camera to replace many traditional cameras. While the Sigma is a significant investment, its superior range and performance allows it to replace and outperform other solutions, making it a viable option for a variety of applications.

Thermal Advantages Over Optical

Ascendent's thermal cameras let you see further than any other night vision technology. All CCTV cameras require a light source which means using either expensive image intensifiers, which produce blurry lagging video, or the cameras have to be illuminated using LED arrays that are only effective for about 200m. Furthermore, LEDs only illuminate a small portion of the cameras FOV whereas a thermal imager can see everything, day or night. Even during the day there are situations where thermal is better as CCTV cameras can be rendered useless by direct/reflected sunlight or areas where contrast is poor.





Specifications subject to change without notice

Optical Assembly

Image Sensor	1/2" EX IR enhancing CCD (optional 1/3" CCD 600/700TVL) 0.00008 Lux
Camera Mode	True Day/Night (ICR) Auto Color / BW
Image Enhancements	BLC / BLC . 3DNR / DIS / Sens-Up / Privacy Zones
Lens	16mm (wide) to 2000mm motorized zoom lens (with 2X)
Angle of View	22.6° to 0.18° 1/2" CCD (Optional 1/3" CCD 17° to 0.14°)

ZLID Illuminator

Source	Class 3B Laser 808nm
Beam	19.5° to 0.45° (43X) Optional 0.35° to 19.5° (55X)
Power	0-10W, 140m NOHD (Optional 15W)
Alignment	Up / Down / Left / Right (Externally with Allen Key)
ZLID Illuminator	Zoom Laser IR Diode Syncs with Zoom Lens

336 V2 FLIR Thermal Imager (640 Optional)

Lens	21-100mm continuous zoom
Image Sensor	FPA, uncooled Vanadium Oxide micro-bolometer (cooled core available) 7.5Hz NTSC, 8.3Hz PAL CMOS 8-14 Bit (2nd Generation)
Picture Elements	324(H) x 256(V) pixels (640x480 optional with 8X zoom)
Scene Temperature	-40°C to +160°C (High and Low Gain)
Pixel Pitch	17µm (32% sharper image over 25µm sensors) FLIR's proprietary noise reduction
Image Optimizations	BPR, NUC, & AGC'd user configurability via SDK, GUI
Digital Zoom	2X & 4X dynamic zoom/pan with dynamic range switching
Thermal Sensitivity/Response	36 mk @ f1.0 / 85mk @ f1.6 7.5-14 micron
Image Display Modes	White hot, black hot, false color, and color & monochrome pallets (LUTs)

Communications & Presets

Presets	Up to 60 presets accurate to less than 0.01°
Preset Tours	6 preset tours (user defined)
Home Position	Yes (preset 1 or tour)
Communication	RS485 / RS422
Control Protocol	Pelco D/P Extended

Mechanical

Drive Unit	Integral pan/tilt brushless motor drive micro-step , pan and tilt (45kg max load)
Pan Angle and Speed	360° continuous pan variable speed up to 20°
Tilt Angle and Speed	Configured to suit application
Speed Control	Closed loop electronics
Proportional P/T to Zoom Position	Yes: automatic adjust speed with zoom for smooth accurate positioning

Physical

Construction	High strength aluminum alloy
Viewing Window	Flat glass (optical) germanium glass (thermal) (bullet-proof optional)
Standard Colors	White (black optional depending on climate)