

Sarix Thermal Imaging Systems



Sarix Thermal Imaging

- Sarix Ti Product Overview
- Key Product Advantages
- Key Objections
- Selling Thermal Imaging



Thermal Imaging

Detection Capability beyond the limits Visible Light Cameras



Sarix Ti 35mm 384x288



Day/Night Camera in Night Mode

Sarix Thermal Product Snapshot

- Fixed and Pan/Tilt Models
 - Integrated Outdoor Enclosure for Fixed Mount
 - Esprit Platform for Pan/Tilt Models
- Multiple Resolutions, Lenses and Price Points
 - 110 SKUs
- IP and Analog Output in the Same Package
- Advanced Analytics and Sarix API
- Full Frame and reduced Frame-rate Models



Product Specifications



Thermal Imager

- Sun-safe, Uncooled Amorphous Silicon Microbolometer
- Sensitivity below NETD 50mK at f/1.0
- Long Wave Infrared Technology (LWIR)
- 640x480 Resolution at 17 μ m Pixel Size
- 384x288 and 160x120 Resolutions at 25 μ m Pixel Size
- Multiple Display Formats

Network/IP

- Sarix-based Encoding Platform
- H.264 (High, Main or Base Profiles) and MJPEG Compression
- Up to 2 Simultaneous Streams
- Advanced Analytics

Product Specifications

- Pan/Tilt Positioner
- Variable Speed
- 360° Continuous Pan
- +33° to -83° Tilt Range from Horizontal
- Operational in 90mph Wind Conditions
- Preset Positioning and Preset Tours



Fixed Mount Model Numbers



Lens	Format	Resolution		
		640 x 480	384 x 288	160 x 120
6.30 mm	NTSC	—	—	TI106
	PAL	—	—	TI106-X
14.25 mm	NTSC	TI614	TI314	—
	PAL	TI614-X	TI314-X	—
	PAL, 8.33 ips	TI614-X1	TI314-X1	—
35 mm	NTSC	TI635	TI335	—
	PAL	TI635-X	TI335-X	—
	PAL, 8.33 ips	TI635-X1	TI335-X1	—
50 mm	NTSC	TI650	TI350	—
	PAL	TI650-X	TI350-X	—
	PAL, 8.33 ips	TI650-X1	TI350-X1	—
100 mm	NTSC	TI6100	TI3100	—
	PAL	TI6100-X	TI3100-X	—
	PAL, 8.33 ips	TI6100-X1	TI3100-X1	—

Pan/Tilt Model Numbers (384x288)



Lens	Format	Pedestal Mount		Wall Mount	
		24 VAC	110/230 VAC	24 VAC	110/230 VAC
14.25 mm	NTSC	ESTI314-2N	ESTI314-5N	ESTI314-2W	ESTI314-5W
	PAL	ESTI314-2N-X	ESTI314-5N-X	ESTI314-2W-X	ESTI314-5W-X
	PAL, 8.33 ips	ESTI314-2N-X1	ESTI314-5N-X1	ESTI314-2W-X1	ESTI314-5W-X1
35 mm	NTSC	ESTI335-2N	ESTI335-5N	ESTI335-2W	ESTI335-5W
	PAL	ESTI335-2N-X	ESTI335-5N-X	ESTI335-2W-X	ESTI335-5W-X
	PAL, 8.33 ips	ESTI335-2N-X1	ESTI335-5N-X1	ESTI335-2W-X1	ESTI335-5W-X1
50 mm	NTSC	ESTI350-2N	ESTI350-5N	ESTI350-2W	ESTI350-5W
	PAL	ESTI350-2N-X	ESTI350-5N-X	ESTI350-2W-X	ESTI350-5W-X
	PAL, 8.33 ips	ESTI350-2N-X1	ESTI350-5N-X1	ESTI350-2W-X1	ESTI350-5W-X1
100 mm	NTSC	ESTI3100-2N	ESTI3100-5N	EST3100-2W	ESTI3100-5W
	PAL	ESTI3100-2N-X	ESTI3100-5N-X	ESTI3100-2W-X	ESTI3100-5W-X
	PAL, 8.33 ips	ESTI3100-2N-X1	ESTI3100-5N-X1	ESTI3100-2W-X1	ESTI3100-5W-X1

Pan/Tilt Part Numbers (640x480)



Lens	Format	Pedestal Mount		Wall Mount	
		24 VAC	110/230 VAC	24 VAC	110/230 VAC
35 mm	NTSC	ESTI635-2N	ESTI635-5N	ESTI635-2W	ESTI635-5W
	PAL	ESTI635-2N-X	ESTI635-5N-X	ESTI635-2W-X	ESTI635-5W-X
	PAL, 8.33 ips	ESTI635-2N-X1	ESTI635-5N-X1	ESTI635-2W-X1	ESTI635-5W-X1
50 mm	NTSC	ESTI650-2N	ESTI650-5N	ESTI650-2W	ESTI650-5W
	PAL	ESTI650-2N-X	ESTI650-5N-X	ESTI650-2W-X	ESTI650-5W-X
	PAL, 8.33 ips	ESTI650-2N-X1	ESTI650-5N-X1	ESTI650-2W-X1	ESTI650-5W-X1
100 mm	NTSC	ESTI6100-2N	ESTI6100-5N	ESTI6100-2W	ESTI6100-5W
	PAL	ESTI6100-2N-X	ESTI6100-5N-X	ESTI6100-2W-X	ESTI6100-5W-X
	PAL, 8.33 ips	ESTI6100-2N-X1	ESTI6100-5N-X1	ESTI6100-2W-X1	ESTI6100-5W-X1

Thermal Applications by Performance

640x480

• Critical Applications

- Military
- Government
- International Border
- Seaways

384x288

• Standard Applications

- Perimeter
- Border
- Port
- Airport
- Light Restricted

160x120

• Entry Level Applications

- Affordable Thermal Imaging
- Any Light Challenged Application

The 160x120 model with 6.3mm lens can offer detection of persons in a 35 degree field of view out to 140 meters (450 feet) for about the cost of a Spectra dome!

Export Rules, briefly

160x120

No Export Restrictions

Requires BIS711

384x288

8.33 fps
No Export Restrictions

Full Frame Rate to Preferred Country does not Require Export License

Full Frame Rate to non-Preferred Countries Requires Export License

Requires BIS711

640x480

Requires Export License

Requires BIS711

Preferred Countries:
EU Members
Australia
Canada
Iceland
Japan
New Zealand
Norway
South Africa
South Korea
Switzerland
Turkey

Export Restricted Countries: Cuba, Iran, N. Korea, Sudan and Syria

Sarix Ti Competitive Advantages

- Our Camera Package

- Amorphous Silicon Sensor
- Internally Developed
- Our Core!
- Sarix-based Camera Platform

***Our 384x288 sensor yields
40% more pixels of resolution than
a 320x240 sensor!***

- Our System Platform

- Esprit-based Pan/Tilt Platform
- IP and Analog

- Our System Capability

- Unique, End-to-End, “Photon to Hard Drive” Capability
- Integrated Pelco Analytics

Key Objections

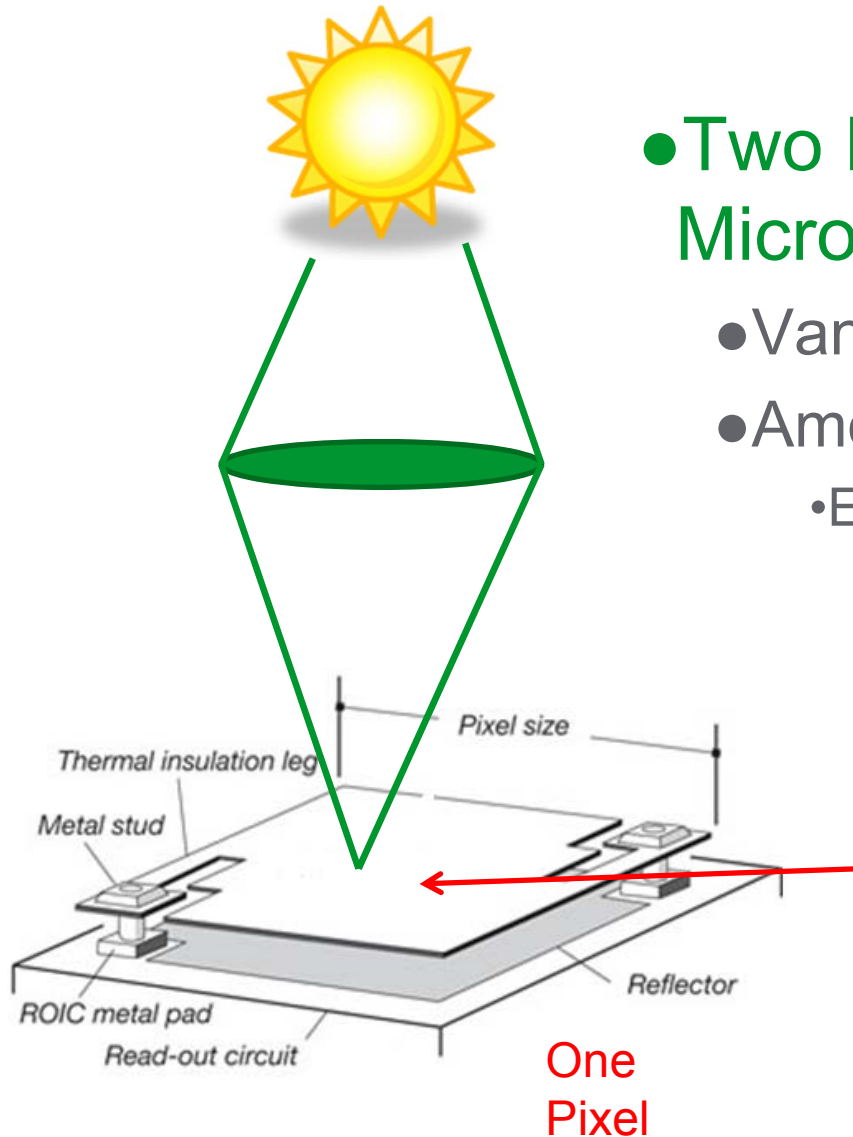
- **Pelco by Schneider Electric does not know Thermal Technology**

- Pelco has been selling and supporting Thermal imaging cameras for nearly 10 years
- Pelco has led the thermal market in camera and positioner (pan/tilt) integration
- Pelco engineering staff include leading Thermal scientists with extensive experience in military applications and imaging science

- **Amorphous Silicon sensors are Inferior to Vanadium Oxide sensors**

- A leader in Thermal technology has suggested that Amorphous Silicon cannot be made “sun safe” – meaning the sensor would be damaged if pointed at the sun
- This is simply not true!
- When properly engineered, Amorphous Silicon sensors perform as good or better than Vanadium Oxide sensors
- See next slides on Solar Exposure...

Solar Exposure



- Two Primary Technologies for Microbolometer Sensors

- Vanadium Oxide
- Amorphous Silicon
 - Easier to produce and less expensive

Vanadium Oxide or Amorphous Silicon
Layer 0.1 microns thick (1/1,000
thickness of paper)

Is There a Difference?

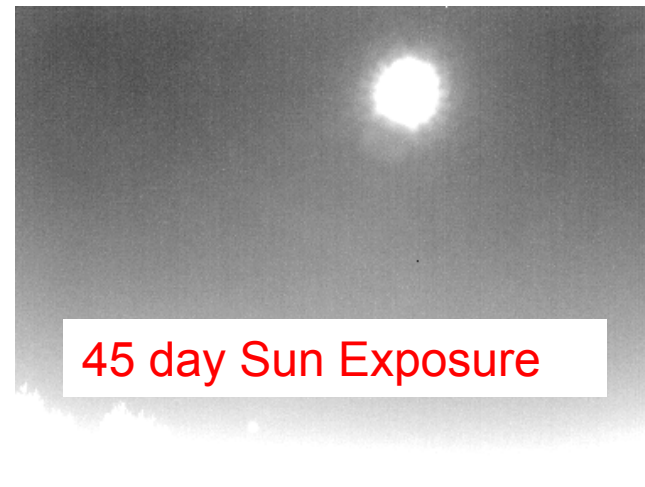
Through Extensive Lab and Real-world Testing on both Material Types

- Both materials show temporary changes of the same magnitude and time constant when exposed to direct sun
- In either case, it is the applications of Algorithms that provide automatic correction to reduce the effects of sun damage

Uncorrected Image



Corrected Image



Thermal Talking Points

- **Where and When to Use Thermal Imaging**
 - The most light challenged applications...indoors and outdoors
 - Perimeter, border, port, airport, remote site
 - Process monitor – leaks and spills, fire, hot spots
- **How Thermal Differs from Visible Light Cameras**
 - Sees Radiated Energy - Emissivity
 - Measure Sensitivity in NETD - mK
- **Detection, Recognition and Identification**
 - Pixels on Target
 - Range
- **Export Rules**

A Unique Value Proposition

- *Photon to Hard Drive Capability!*
 - Pelco is the ONLY manufacturer capable of an end-to-end system that includes a totally integrated TI solution
- Sarix TI is an *Easy to Deploy Solution* for any Security Application
- Analog and IP in the same package
 - Easy, flexible integration into any new or existing system
- *Advanced Analytics*
 - Embedded Pelco Analytics suite included when IP is used
- Sarix TI is a Complete Product Offering for Thermal
 - Fixed and P/T with a range resolutions and lenses
 - Options based upon price and performance

In Summary

Ordering and Availability

- Sarix Ti is Available NOW for Orders!
- Sarix Ti Deliveries will Begin in October

The Basic Message

Sarix Ti...

...produces consistent images in bright light or total darkness

...is designed for security applications

...integrates easily into any new or existing IP or Analog system

...offers embedded analytics capabilities

...is an affordable alternative to competitive offerings

THANK YOU!