

# Sarix® TI Series Thermal IP Cameras

## IP AND ANALOG THERMAL CAMERA WITH INTEGRATED FIXED ENCLOSURE

### Product Features

- Uncooled, Sun-Safe, Amorphous Silicon Microbolometer
- Long Wave Infrared (LWIR)
- IP and Analog Capability
- 640 x 480, 384 x 288, or 160 x 120 Resolution Options
- 17 µm Pixel Size (640 x 480 model)
- 25 µm Pixel Size (384 x 288 and 160 x 120 models)
- Sensitivity Below NETD <50 mK at f/1.0
- 24 VAC/24 VDC
- H.264 and MJPEG Compression
- Up to 2 Simultaneous Video Streams
- Built-in Analytics
- Multiple Lens Options
- Designed for Maximum Environmental Protection
- Compact, Lightweight Aluminum Construction

### Camera

The **Sarix® TI Series Fixed Thermal IP Camera** is an advanced thermal imaging system designed for easy integration into any new or existing video security application. The system is designed to provide detection, recognition, and identification of people and vehicles in any lighting condition, including complete darkness. Every **Sarix TI Series** features IP or analog outputs in the same package and an integrated environmentally protected IP66 rated enclosure. Additionally, when used in an IP system, the **Sarix TI Series** features a full suite of designed-for-thermal analytics.

At the core of the **Sarix TI Series** is an uncooled sun-safe microbolometer, long-wavelength infrared (LWIR) camera that delivers up to 640 x 480 thermal video. These cameras feature an amorphous silicon detector, which has lower fixed pattern noise and a more uniform response than vanadium oxide detectors, while still maintaining high resolution and sensitivity when exposed directly to the sun during normal daylight hours.

The **Sarix TI Series** provides outstanding sensitivity below 50 mK at f/1.0. It is capable of multiple display formats, including white hot, black hot, and color signatures. The **Sarix TI Series** is available with multiple lens configurations for effective deployment in a wide range of applications.



- Meets NEMA Type 4X and IP66 Standards
- Complete with Sun Shroud and Heater/Defroster

The **Sarix TI Series** is available in 640 x 480, 384 x 288, or 160 x 120 resolution formats. The fixed camera has an input voltage of 24 VAC or 24 VDC.

In IP installations, the **Sarix TI Series** can support two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The streams can be configured to a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration. When used in analog installations, the **Sarix TI Series** supports analog video output.

The powder-coated aluminum enclosure makes the **Sarix TI Series** ideal for either indoor or outdoor applications. The system has a sustained operating temperature range of -40° to 50°C (-40° to 122°F). A built-in heater/defroster and sun shroud are standard features on the **Sarix TI Series**.

### Built-in Analytics

**Pelco® Analytics** enhance the flexibility and performance of the **Sarix TI Series** when used in an IP video system. Pelco Analytics are easy to configure for alarm notification when used with Endura® or a third-party system that supports Pelco's Analytics API system.

### Web Interface

The **Sarix TI Series** uses a standard Web browser for powerful remote setup and administration.



by Schneider Electric

International Standards  
Organization Registered Firm,  
ISO 9001 Quality System



C1316 / NEW 9-27-11

# TECHNICAL SPECIFICATIONS

## PELCO ANALYTICS

The Sarix TI Series includes five user-configurable behaviors. The camera is capable of running up to three behaviors simultaneously; although, the number of behaviors is limited to the available processing power of the camera and the type of analytic being used.

**Note:** Available processing power is determined by the settings for compression standards, resolution, image rate, bit rate, and analytic configuration. For each behavior, you can create several custom profiles that contain different camera settings. With these profiles, you can set up different scenarios for the behavior, which will automatically detect and trigger alarms when specific activity is detected.

Pelco Analytics are configured and enabled using a standard Web browser, and Pelco behaviors are compatible with Endura or a third-party system that supports Pelco's Analytics API system. Multiple Pelco analytics can be scheduled to work during a certain time or condition. For example, during the day, a camera can be configured with Object Counting to count the number of people that enter a lobby door. At night, the operator can change the profile to Camera Sabotage to trigger an alarm if a camera is moved or obstructed. Each suite includes the following behaviors:

- **Adaptive Motion:** Detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a user-defined zone or cross a trip wire. This behavior is primarily used in outdoor environments with light traffic to reduce the number of false alarms caused by environmental changes.
- **Camera Sabotage:** Detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.
- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone longer than the user-defined time allows. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- **Object Counting:** Counts the number of objects that enter a defined zone or cross a trip wire. This behavior might be used to count the number of people at a store entrance/exit or inside a store where the traffic is light. This behavior is based on tracking and does not count people in a crowded setting.
- **Stopped Vehicle:** Detects vehicles stopped near a sensitive area longer than the user-defined time allows. This behavior is ideal for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

## THERMAL CAMERA/OPTICS

Detector	Sun-safe, uncooled microbolometer, amorphous silicon
Array Format	640 x 480, 384 x 288, or 160 x 120
Pixel Size	
640 x 480	17 µm
384 x 288, 160 x 120	25 µm
Effective Resolution	307,200 (640 x 480); 110,592 (384 x 288); 19,200 (160 x 120)
Spectral Response	7.5 to 13.5 µm, LWIR
Normalization Source	Internal shutter (offset only), 0.3 second video freeze during shutter
Temporal NETD	50 mK at f/1.0
Display Formats	White hot, black hot, and rainbow

## LENS

640 x 480 Resolution		
Lens (mm)	F-Number (f)	Field of View (H/V/D)
14.25	1.3	44° x 33° x 54°
35	1.4	18° x 13° x 22°
50	1.7	12° x 9° x 15°
100	1.6	6° x 5° x 8°
384 x 288 Resolution		
14.25	1.3	39° x 29° x 48°
35	1.4	16° x 12° x 19°
50	1.7	11° x 8° x 14°
100	1.6	6° x 4° x 7°
160 x 120 Resolution		
6.30	1.2	55° x 41° x 68°

## VIDEO

### IP/NETWORK

Video Encoding	H.264 High, Main, or Base profiles and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate*	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7.5, 6, 5, 4, 3, 2.5, 2, 1 (dependent upon stream configuration)
Available Resolutions	640 x 480, 384 x 288, and 160 x 120
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup
Pelco System Integration	Endura 2.0 (or later) Digital Sentry® 4.2 (or later)

### ANALOG

Video Port	75 ohms, unbalanced
Video Modes	NTSC or PAL
Video Level	1 Vp-p

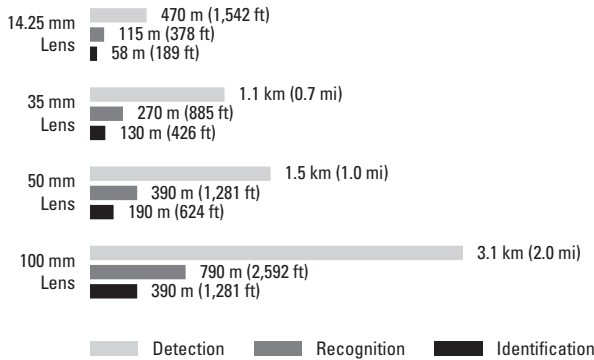
\*Some models are limited to 8.33 ips to comply with US government export control regulations.

# TECHNICAL SPECIFICATIONS

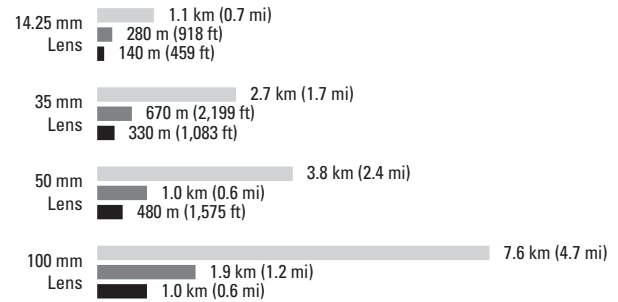
## RANGE PERFORMANCE\*

### 640 x 480

Detection, Recognition, and Identification of a Human Target<sup>†</sup>

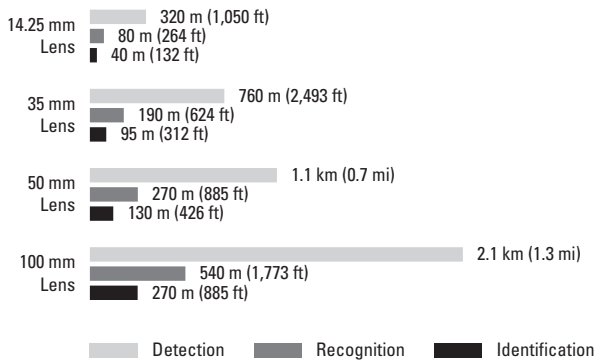


Detection, Recognition, and Identification of a Vehicle Target<sup>†</sup>

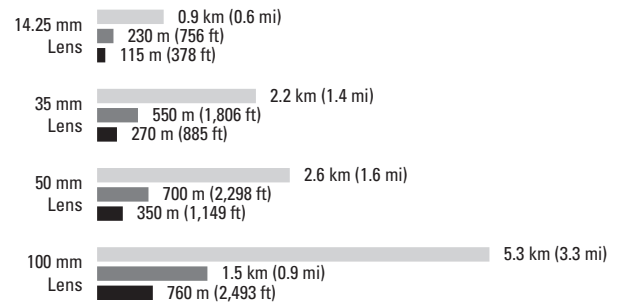


### 384 x 288

Detection, Recognition, and Identification of a Human Target<sup>†</sup>

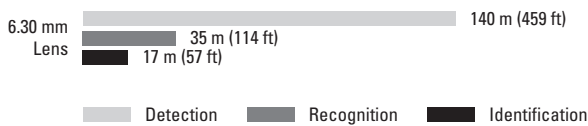


Detection, Recognition, and Identification of a Vehicle Target<sup>†</sup>



### 160 x 120

Detection, Recognition, and Identification of a Human Target<sup>†</sup>



Detection, Recognition, and Identification of a Vehicle Target<sup>†</sup>



\*Range performance can vary based on camera setup, user experience, environmental conditions, and display type used. Calculations are based on 2°C (36°F) difference, 50 percent probability of target detection, and 0.85/km atmospheric attenuation factor.

<sup>†</sup>The number of pixels on target are assumed to be 1.5 pixels for detection, 6 pixels for recognition, and 12 pixels for identification; the size of a human target is assumed to be 1.8 m (5.9 ft) vertical and 0.5 m (1.6 ft) horizontal; the size of a vehicle target is assumed to be 2.3 m (7.6 ft) vertical and 2.3 m (7.6 ft) horizontal.

# TECHNICAL SPECIFICATIONS

## MODELS\*

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	—
100 mm	NTSC	TI6100	TI3100	—
	PAL	TI6100-X	TI3100-X	—
	PAL, 8.33 ips	TI6100-X1	TI3100-X1	—

\*Some models may be subject to US government export control regulations.

## ELECTRICAL

Port	RJ-45 connector for 100Base-TX, auto MDI/MDI-X												
Cabling Type	Cat5 or better for 100Base-TX												
Power Input	24 VAC or 24 VDC												
Input Voltage Range	±10%												
Power Consumption	<table border="1"> <thead> <tr> <th>Lens (mm)</th> <th>Power</th> </tr> </thead> <tbody> <tr> <td>6.30, 14.25, 35, 50;</td> <td>1.30 A, 30 VA (22 W);</td> </tr> <tr> <td>100</td> <td>3.8 A, 90 VA (82 W)</td> </tr> <tr> <td>24 VDC</td> <td>6.30, 14.25, 35, 50;</td> </tr> <tr> <td>100</td> <td>0.90 A (22 W);</td> </tr> <tr> <td></td> <td>3.50 A (85 W)</td> </tr> </tbody> </table>	Lens (mm)	Power	6.30, 14.25, 35, 50;	1.30 A, 30 VA (22 W);	100	3.8 A, 90 VA (82 W)	24 VDC	6.30, 14.25, 35, 50;	100	0.90 A (22 W);		3.50 A (85 W)
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Current Consumption	<750 mA nominal; <1.2 A maximum												
Local Storage	Micro SD												
Alarm Input	10 VDC maximum, 5 mA maximum												
Alarm Output	0 to 15 VDC maximum, 75 mA maximum												
Audio	Bidirectional, half duplex; line level/external microphone input; 600 Ohm differential; 1 Vp-p maximum signal level												
Compression	G.711 PCM 64 kbps												

## MECHANICAL

Latching	2 captive Torx™ screws
Cable Entry	2 adjustable 0.5-inch NPT liquid-tight glands

## GENERAL

Construction	Aluminum												
Finish	Gray polyester powder coat												
Environment	Indoor/outdoor												
Operating Temperature	-40° to 50°C (-40° to 122°F)												
Storage Temperature	-40° to 60°C (-40° to 140°F)												
Weight	<table border="1"> <thead> <tr> <th>Unit</th> <th>Shipping</th> </tr> </thead> <tbody> <tr> <td>6.30 mm</td> <td>3.1 kg (6.9 lb) 4 kg (9 lb)</td> </tr> <tr> <td>14.25 mm</td> <td>3.1 kg (6.9 lb) 4 kg (9 lb)</td> </tr> <tr> <td>35 mm</td> <td>3.2 kg (7.2 lb) 4 kg (9 lb)</td> </tr> <tr> <td>50 mm</td> <td>3.3 kg (7.3 lb) 4 kg (9 lb)</td> </tr> <tr> <td>100 mm</td> <td>3.4 kg (7.5 lb) 4 kg (9 lb)</td> </tr> </tbody> </table>	Unit	Shipping	6.30 mm	3.1 kg (6.9 lb) 4 kg (9 lb)	14.25 mm	3.1 kg (6.9 lb) 4 kg (9 lb)	35 mm	3.2 kg (7.2 lb) 4 kg (9 lb)	50 mm	3.3 kg (7.3 lb) 4 kg (9 lb)	100 mm	3.4 kg (7.5 lb) 4 kg (9 lb)
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## RECOMMENDED MOUNTS

### Ceiling/Pedestal

EM1009U, EM1015U Medium duty ceiling/pedestal mount

### Wall

EM1450 Light duty wall mount  
EM1900U Medium duty wall mount

### Pipe/Pole

EM1109 Medium duty pedestal mount for horizontal or vertical pipe/pole applications  
EM2000 Medium duty mount for vertical applications

## RECOMMENDED POWER SUPPLIES

WCS1-4 Outdoor camera power supply, 100/120/240 VAC input; one 24/26/28 VAC output; total current capacity of 4 A (100 VA)  
WCS4-20 Outdoor multiple camera power supply, 120/240 VAC input; four fused 24/28 VAC outputs; total current capacity of 20A(480 VA)

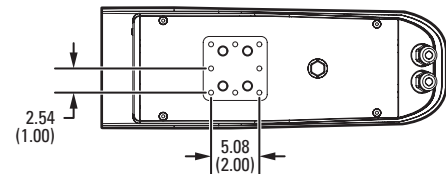
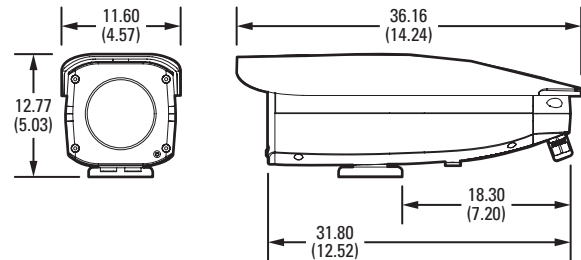
## CERTIFICATIONS/RATINGS/PATENTS†

- CE, Class A
- FCC, Class A
- UL Listed
- C-Tick
- Meets NEMA Type 4 and IP66 standards
- Patents are pending
- Shock and Vibration, Meets NEMA TS 2; IEC613736-8, -9, -10

†As of the date of this publication, all certifications are pending. Please consult the factory, our Web site at [www.pelco.com](http://www.pelco.com), or the most recent B.O.S.S.® update for the current status of certifications.



NOTE: VALUES IN PARENTHESES ARE INCHES; ALL OTHERS ARE CENTIMETERS.



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