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Raubtier thermal systems

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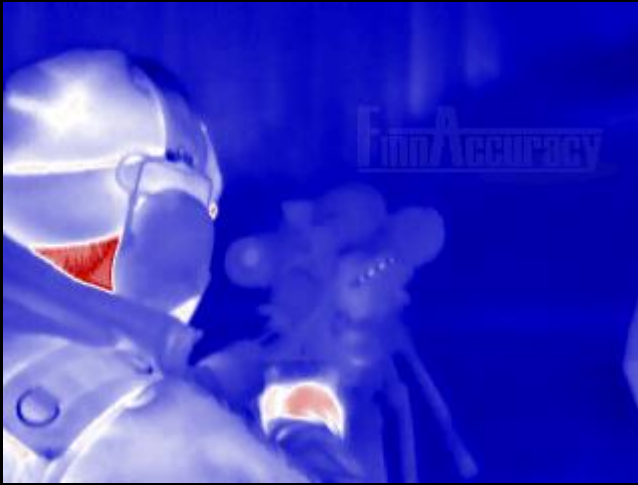
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TV/TS-640-25, picatinny mount with external contacts

## **Key features, 17mm and 25mm objective**

- 640x480 or 320x240 resolution at 60Hz
- Models include universal thermal sight (TS) and thermal viewer (TV)
- Flexible and versatile system: headset, stand-alone sight, vehicle mount, handheld viewer and clip-on thermal pairing for low-magnification daytime aiming scopes
- External power feed and LCD monitor option via mount contact points: no cable plugging needed
- Very compact and lightweight design, milspec performance
- 50BMG shockproof, waterproof and environmental protection accordingly to MIL-STD 810G
- Adaptive local contrast enhancement, edge sensitive image de-noising
- Shutterless adaptive non-uniformity correction
- Several color palettes, optimal for various observing situations
- Customized features available on request: f.e. false colors, reticles
- Image capturing to internal memory, USB downloadable
- Innovative features, customizable accordingly to customer needs
- Under 2s cold start, no thermal calibration needed on start-up or during use
- Optional remote control
- Optional integrated IR or eye-visible laser illuminator / pointer
- More than 4 hours of continuous operating time on CR123 batteries
- Made in Germany with European key components, customer support not ITAR dependable
- Manufacturer VHF Defense, 20 year experience on high-end electronics



TV-320-25. 320x240 resolution. Shooter wearing near-IR area protected jacket



TV-640-25, 640x480 resolution. Lower capture with 2x digital zoom





TV-640-25, 640x480 resolution



TV-640-25, 640x480 resolution

Objective Size	Sensor Size		
	320 × 240	640 × 480	1024 × 768
17 mm	<b>340m* / 34° FOV</b> TS-320-17 TV-320-17 Q4 2014	<b>500m* / 45° FOV</b> TS-640-17 TV-640-17 Q4 2014	we are currently working on it
25 mm	<b>500m* / 23° FOV</b> TS-320-25 TV-320-25 in production	<b>750m* / 31° FOV</b> TS-640-25 TV-640-25 in production	

\* Detection range for human sized target (dependent on atmospheric conditions)

TS: Thermal Sight (with reticle and stadimeter)

TV: Thermal View (without reticle)



TV-320-75. Compact, light and rugged system

## **Key features, 75mm objective**

- 640x480 or 320x240 resolution at 60Hz
- Models include universal thermal sight (TS) and thermal viewer (TV), clip-on device coming soon
- Flexible and versatile system: stand-alone sight, vehicle mount and handheld viewer.
- Clip-on daytime aiming scope coupling coming soon
- External power feed and LCD monitor option via mount contact points: no cable plugging needed
- Very compact and lightweight design, milspec performance
- 50BMG shockproof, waterproof and environmental protection accordingly to MIL-STD 810G
- Adaptive local contrast enhancement, edge sensitive image de-noising
- Shutterless adaptive non-uniformity correction
- Several color palettes, optimized for various observing situations
- Customized features available on request
- Image capturing to internal memory, USB downloadable
- External power feed and LCD monitor option
- Innovative features, customizable accordingly to customer needs
- Under 2s cold start, no thermal calibration needed on start-up or during use
- Optional remote control
- More than 4 hours of continuous operating time on CR123 batteries
- Made in Germany with European key components, customer support not ITAR dependable
- Manufacturer VHF Defense, 20 year experience on high-end electronics



Scenery with normal camera. Red square = observed area with TV-320-75

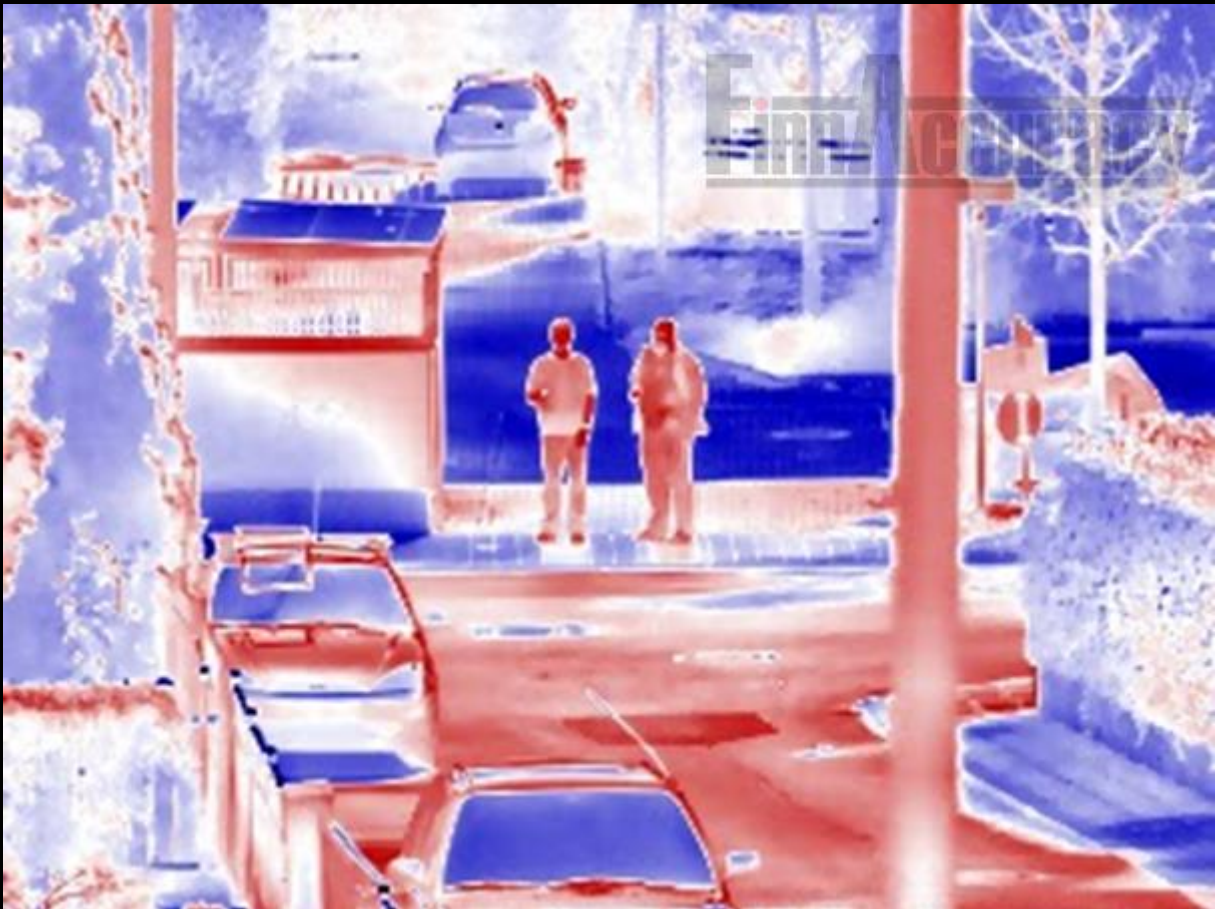


2 persons, 100m. Both smoking. Third cigarette on ground from passing car. TV-320-75, 320x240 resolution

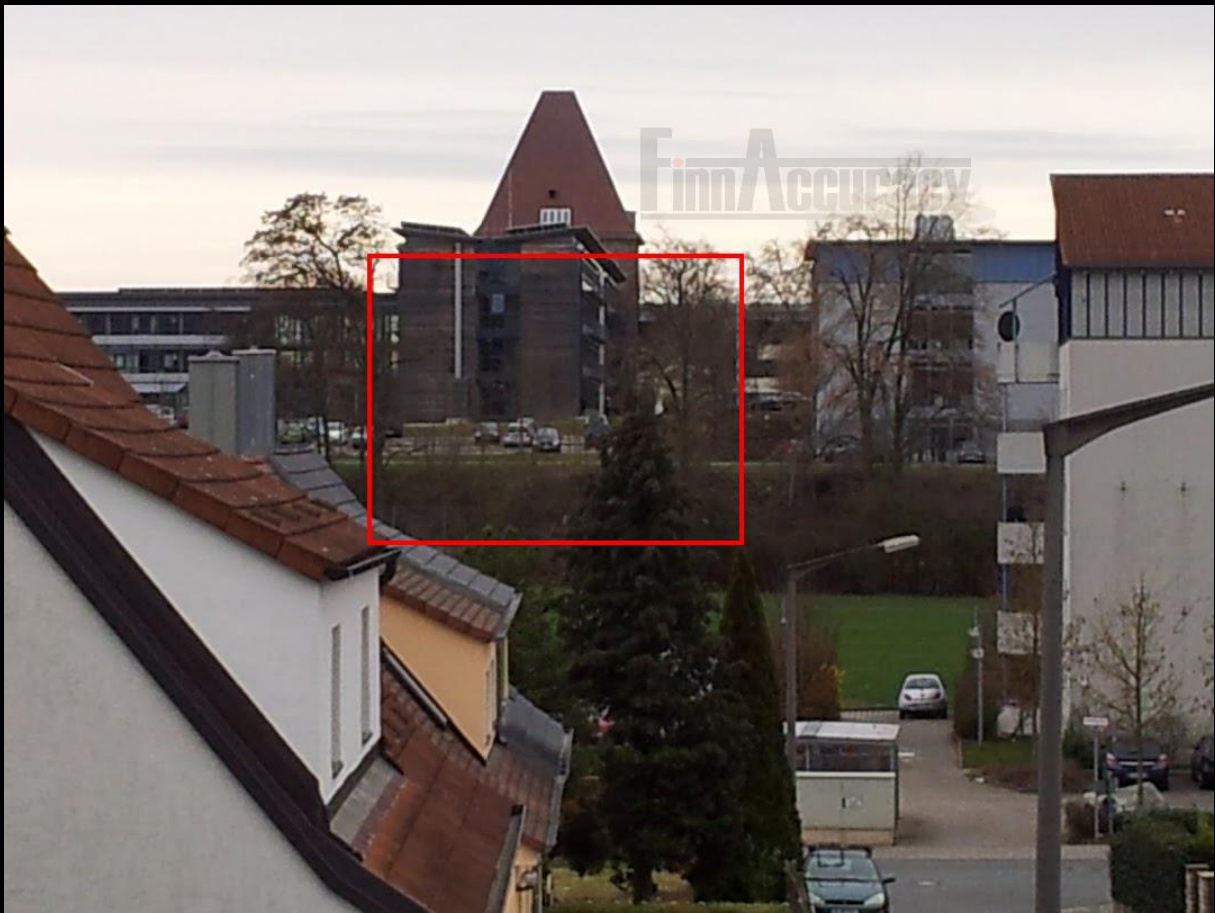




2 persons, 100m. Right one smoking, left dropped cigarette. TV-320-75, 320x240 resolution



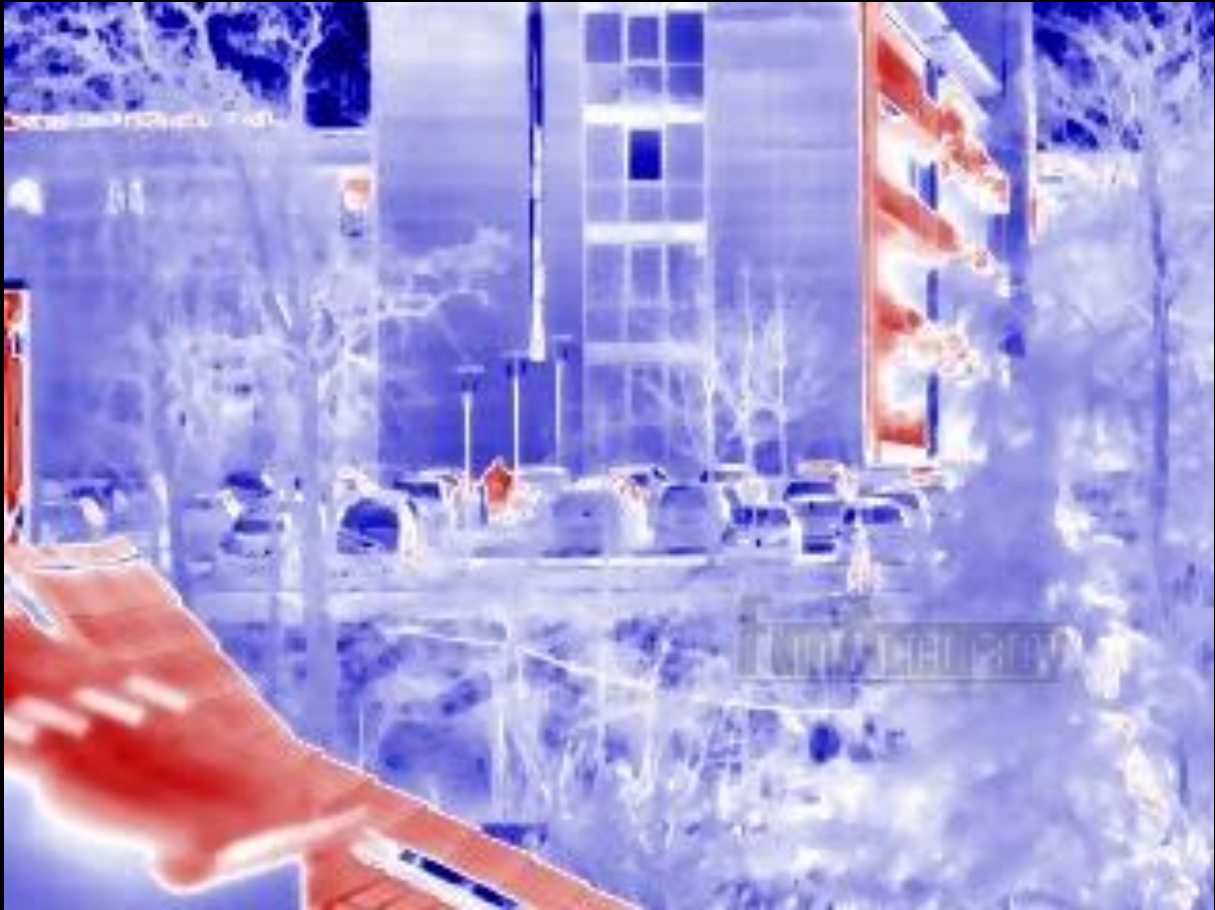
Red-warm highlight, right side person beard visible. TV-320-75, 320x240 resolution



Car parking area, 325m distance



TV-320-75, 320x240 resolution. 325m distance



TV-320-75, 320x240 resolution. 325m distance



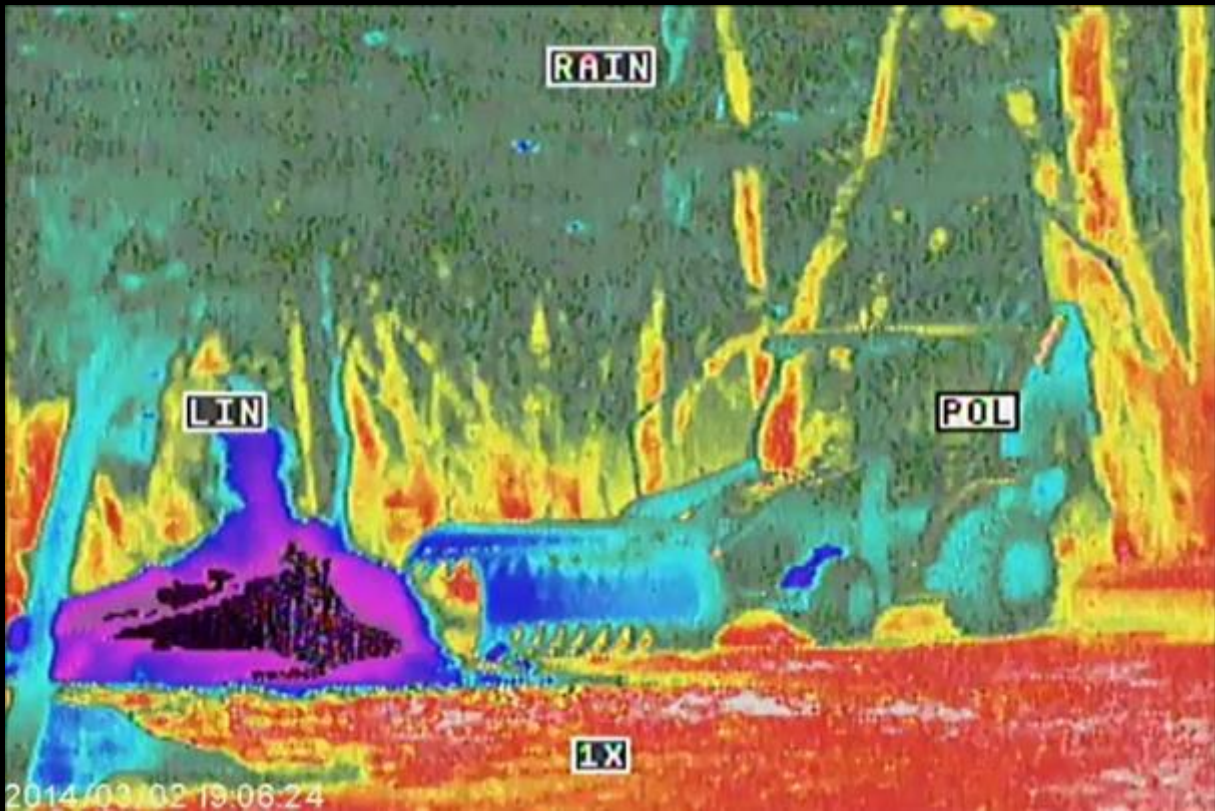
TV-320-75, 320x240 resolution. 325m distance



TV-320-75, 320x240 resolution, adaptive local contrast example



Competing milspec clip-on device with 640x480 resolution.  
Pixels clearly visible. Less thermal contrast on faces. Less depth of field, blurry background



Competing milspec handheld device #2, 640x480 resolution



Competing milspec clip-on device #3, 320x240 resolution



Competing milspec handheld #4, 320x240 resolution

Objective Size	Sensor Size		
	320 × 240	640 × 480	1024 × 768
75 mm	<b>1500m* / 7.5° FOV</b> TS-320-75 TV-320-75 Q2 2014	<b>2200m* / 10.5° FOV</b> TS-640-75 TV-640-75 Q2 2014	we are currently working on it
100 mm	on special request only	<b>2950m* / 7.8° FOV</b> TS-640-100 TV-640-100 Q4 2014	

\* Detection range for human sized target (dependent on atmospheric conditions)

TS: Thermal Sight (with reticle and stadimeter)

TV: Thermal View (without reticle)

## TECHNICAL SPECIFICATIONS

	TS-640-25	TS-320-25	TS-640-75	TS-320-75
<b>Physical</b>				
Weight with batteries	< 420 grams		< 890 grams	
Length	143 mm		175 mm	
Height	54 mm		89 mm	
Width	67 mm		89 mm	
<b>System</b>				
Frame Rate	60 Hz		60 Hz	
Detection Range *	750 m	500 m	2200 m	1500 m
Boresight Accuracy	within 0.3 mrad		within 0.3 mrad	
Start-Up Time	2 seconds max		2 seconds max	
Video Output	PAL composite video		PAL composite video	
<b>Optical</b>				
Field of View (diagonal)	31°	23°	10.5°	7.5°
Eye Relief	25 mm minimum		25 mm minimum	
Diopter	+5 to -5 adjustable		+5 to -5 adjustable	
Focus Range	0.5 m to infinity		8 m to infinity	
<b>Sensor (FPA)</b>				
Technology	uncooled $\alpha$ -Si		uncooled $\alpha$ -Si	
Format (pixel)	640 x 480	320 x 240	640 x 480	320 x 240
NETD	< 55 mK		< 55 mK	
<b>Environmental</b>				
Operating Temperature	-30°C to +70°C		-30°C to +70°C	
Storage Temperature	-40°C to +80°C		-40°C to +80°C	
Protection	MIL-STD 810g		MIL-STD 810g	
<b>Operational</b>				
Batteries	2 CR123 Lithium		2 CR123 Lithium	
Battery Life	approx. 4.5 hours		approx. 4.5 hours	

\* moving man (approx.)