



THERMAL-EYE™



Thermal-Eye X-50 Product Description Presentation

September 2007



communications

Infrared Products

L-3 Proprietary Information

See the Unseen™

The Thermal-Eye X-50 has been designed for the cost-sensitive Local and Federal Law Enforcement markets where price often takes priority over performance and features.

The primary mission of the X-50 is to support first responders with rapid, easy to use, handheld thermal vision hardware to find and locate suspects and victims.

Dealer Cost = \$3,995
MSRP = \$4,995

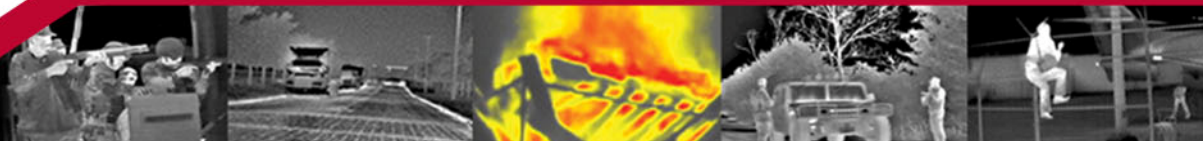


September: Product Launch

October: Shipment Delivery

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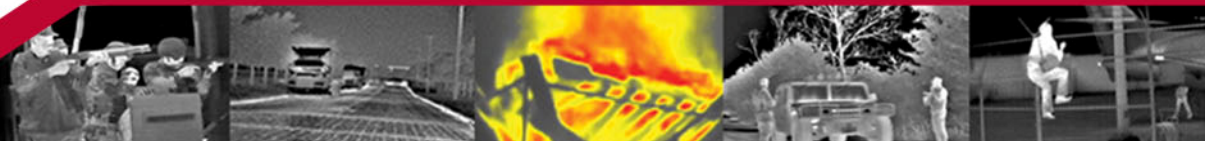
Product Description - Physical



Size	<ul style="list-style-type: none">- 5.25 L x 4.5 W x 2.0 H inches- 13.4 L x 11/4 W x 5.1 H cm
Weight	<ul style="list-style-type: none">- 13 Ounces (381 grams) with AA batteries installed
Mounting	<ul style="list-style-type: none">- 1/4-20 tripod mount
Environmental	<ul style="list-style-type: none">- Operating Temperature: 14°F to 122°F (-10°C to +50°C)- Storage Temperature: -4°F to 176°F (20°C to +80°C)- Waterproof to 9ft (3m) submersion; Buoyant in fresh water- Shockproof to 6ft (2m) drop- EMC/EMI: FCC Part 15 and CE Mark

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Focal Plane Array	Material: Amorphous Silicon Microbolometer Pixel Count (Resolution): 100 x 80 Spectral Response: 7-14 μ m Detector Thermal Sensitivity: < 150mK
Optics	Field of View: 11°H x 8°V Focal Length: 16mm Minimal Focal Distance: 3ft (1m)
Video	Output Format: Analog NTSC or PAL on rear outlet jack Viewfinder Display: Monochrome LCD (320x240) Viewfinder Brightness: Integral to Power On/Off Switch
Power	2 AA batteries; 9 to 12 VDC input on rear outlet jack
Operating Time	2 hours with alkaline, 5 hours with lithium



“X” Portfolio Spec Comparison



	X-200	X-100	X-50
Specs			
Range	450m 1,500 feet	305m 1,000 feet	305m 1,000 feet
Sensitivity	<=50mK	<=100mK	<=150mK
Resolution	160x120	160x120	100x80
FOV	11°	17°	11°
Battery Life	6 Hrs Li, 2.5 Hrs Alkaline	7 Hrs Li, 3 Hrs Alkaline	5 Hrs Li, 2 Hrs Alkaline
Operating Temp	-20° to +60°C -4° to +140°F	-20° to +60°C -4° to +140°F	-10° to +50°C +14° to +122°F
Storage Temp	-20° to +80°C -4° to +176°F	-20° to +80°C -4° to +176°F	-20° to +80°C -4° to +176°F
Color	Green	Black	Dark Blue

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Top 3 Performance Differences



X-50



VS

X-200xp



X-100xp



Lower Image Quality

- Resolution: 100x80 vs. 160x120
- Sensitivity: 150mK vs. 100mK & 50mK

Shorter Battery Life

- 2 Hours Alkaline 2.5 – 3 Alkaline
- 5 Hours Lithium vs. & 6-7 Lithium

Narrower Operational Temperature

- -10°C to + 50°C vs. -20°C to +60°C
(+14°F to +122°F vs. -4°F to +140°F)

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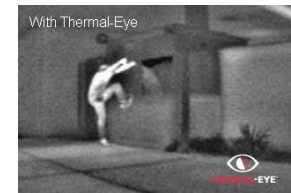
Hand Held Remote Stand Alone use for:

- Covertly Finding and Locating Objects Without Visible Light
- First Responder Land & Water Search and Rescue
- Fugitive Pursuit and Apprehension
- Officer Safety and Protection
- Hot Spot and Disturbed Surface Detection
- Routine Crime Watch Patrols
- Crime Scene Investigations
- Night Vehicle Theft Prevention



Benefits:

- Pocket Sized Lightweight
- Ambidextrous, use with Single Left or Right Hand (keep one hand free)
- Runs on Commercial AA Batteries
- Designed to Survive Arduous Field Use (Military Battle Proven Design)
 - 6 foot (2m) drop to concrete
 - Waterproof to 9 feet (3m)
 - Floats in fresh and salt water
- Can Detect Human Activity at 1000 ft (305m)
- 2" (0.8cm) Rubber Eye Relief, Display Light Shield
- On Display Battery Indicator
- Tripod Mount



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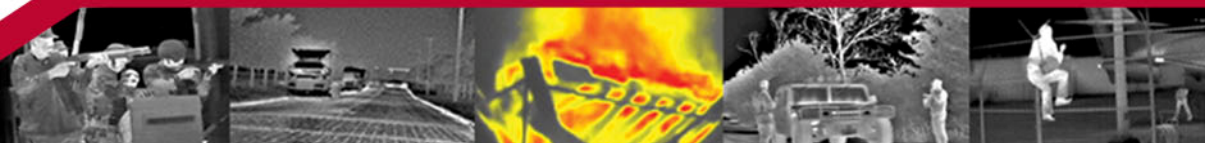
Thermal-Eye X-50 Value Proposition



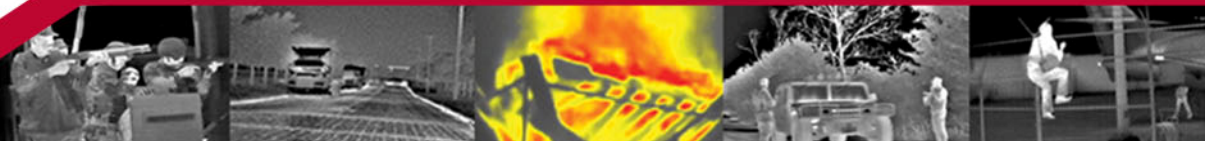
- The X-50 is targeted at the budget conscience local and federal law enforcement and first responder markets where both price and performance are major buying decision factors.
 - Sub \$5K cost sets new low floor for hand held IR cameras
 - Increases buying opportunities for municipalities previously unable to afford this technology
- The size and toughness of the X-50 combined with good image performance and range make this product an ideal fit for this market.
- Simple ambidextrous operation allows the X-50 to be put into the hands of untrained users who can quickly master its operation even under stressful and adverse conditions.
- Standard commercial batteries ensure five hour operational life.
- Tripod mounting supports extended covert surveillance operations.

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Buyers	Product Applications
Mayor, City Council City or Department Manager Emergency Mgmt Director Police Chief, Superintendent	1 st Responder Search, Rescue, and Surveillance Routine Patrols, Suspect Tracking, and Traffic Stops Crime Scene Investigation, Evidence Preservation Energy Audits, Animal Tracking
Plant Security Manager Private Security Owners Civilian Border Patrols	Perimeter Defense, Mobile Intrusion Detection Suspicious Activity Observation Border Observation
Ranchers Hunters/Trackers Naturalists	Livestock Protection and Tracking Wildlife Tracking, Varmint Control Wildlife Nocturnal Habitat Observation
Boat Owners, Security Fisherman	Personal Yacht Security Night and Impaired Vision Navigation
Small Business Owners	Property Protection, Vandalism Reduction
Data Center Owners Facilities Owners	Electrical Panel Monitoring (Insurance Reduction) Equipment Cooling Optimization

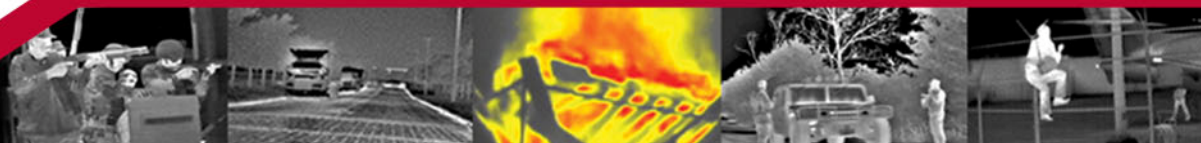


Standard Kit

2 AA alkaline batteries
Neck & Wrist Strap
Tethered Lens Cover
Lens Cleaning Cloth

Optional Accessories

Hard Protective Case
12VDC Auxiliary Power Cable
AC/DC Power Adapter
External Analog Output Video Cable



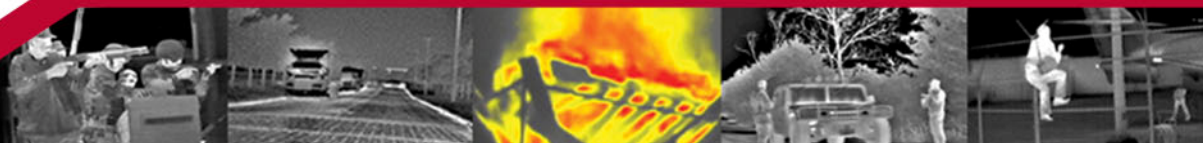
X-50 Competitive Comparison



 communications Infrared Products			
Features	L-3 IRP x50	FLIR Flashsight	FLIR Scout
Thermal Imager:			
Technology	Amorphous Silicon	VOx	VOx
Resolution	100 x 80	160 x 120	160 x 120
FOV	11°	13°x10°	12° x 9°
Detection Range	305 meters	609 meters	400 meters
Weight	.37 kg	0.86 kg	0.68 kg
Size	13.4 x 1.25 x 5.1 cm	25.4 x 7.16 x 9.68 cm	26.5 x 8 x 10.5 cm
Battery Type	2 AA Lithium	4 AA Lithium	Rechargeable
Battery Life	5 hours	7 hours	1.5 hours
Rugged/Environment:			
Performance Level	Very Rugged - Combat Proven	Moderate	Low
Drop Rating	1.8m drop to concrete	No Drop Rating	No Drop Rating
Waterproof	3m - 30 min water immersion	Low pressure jets of water with limited ingress	Water spray with limited ingress
IP Rating	IP-6x	IP-66	IP-54
Pricing:			
MSRP (Estimated \$)	\$4,995	\$9,995	\$8,000

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Q: The Thermal-Eye X-50 looks just like the Thermal Eye X-100 and X-200 products. How is it different?

A: The X-50 uses the same reliable parts as the X-100 and X-200, but to achieve a lower price point the X-50 differs in the following areas:

- Narrower operating temperature range
- Slightly increased background noise
- Decreased detector sensitivity
- Decreased human detection range
- Increased power consumption which results in shorter battery life
- Increased shutter operation as the camera has a different calibration scheme

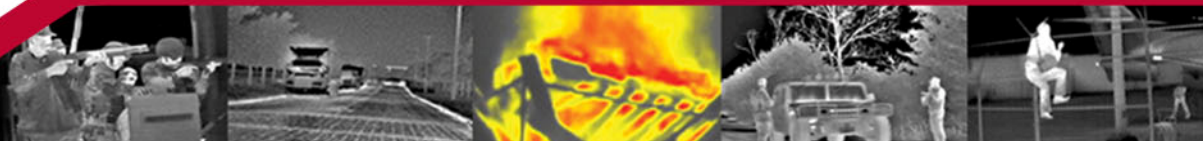
Just like the X-100 and X-200, the X-50 is combat, rugged, easy to use, and carries a identical warranty policy.

Q: Why is L-3 Infrared Products introducing the Thermal-Eye X-50?

A: Local law enforcement and first responders are in need of thermal-imaging technology to perform daily operations. Until now, this technology has been out of reach and too expensive. L-3 Infrared Products is meeting the needs of these groups by delivering a hi-tech solution at an affordable price for such budget driven customer.

Q: Why is the Thermal-Eye X-50 dark blue?

A: The dark blue color was selected by L-3 Infrared Products based on in-market research that confirmed the color blue is the color most associated with local law enforcement. Further, the dark blue color allows the camera to be covertly used a night without exposing the location of the officer.



Q: The X-50 specification sheet does not list MIL requirements for environmental endurance and/or ruggedness. Does this mean that the X-50 is substandard?

A: L-3 IRP has chosen not to follow MIL-STD-810 as it does not adequately reflect the environmental conditions to which the camera is subjected in the hands of commercial end-users. For example many MIL tests require a 48" drop test to plywood and foam placed over concrete. L-3 has validated that the X-50 performance is unchanged when dropped repeatedly from a height of 60" directly onto concrete. Because L-3 IRP tests to more realistic end-user conditions IRP delivers reliable and durable end products.

Q: Why is the Thermal-Eye X-50 not equipped with a standard hard case?

A: Field studies have shown that for the local law enforcement and first responder markets a thermal camera spends the majority of its life outside of the hard case. Many end-users prefer to stow their thermal cameras with their first responder kits or along with other standard issue gear. Other end-users prefer to keep their thermal camera close at hand and easily accessible along with other needed equipment such as night sticks and flashlights. To offer the lowest price possible L-3 IRP ships the standard X-50 in a cardboard container. For those who require a hard case, it may be purchased separately.

