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# First Mate & First Mate MS

Low-Cost, High-Performance Line of  
Handheld Maritime Thermal Cameras

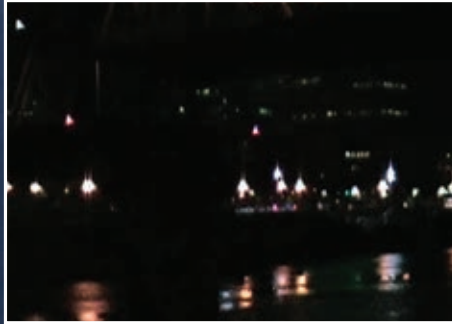


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**NetZeroTools**  
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Your Vision



FLIR Vision



Your Vision



FLIR Vision

## See At Night Like Never Before

First Mate and First Mate MS (Marine Scope) give you the power to see at night like never before, and for less money than you can imagine. Whether you're on a yacht, recreational powerboat, fishing boat, sailboat, or anything in between, you'll be able to see clearly in total darkness.

First Mate gives you the power to see more – and to see farther – than every other night vision technology around:

- See clearly in total darkness – unlike other night vision systems, First Mate requires no light at all
- See logs, rocks, land, and other hazards that radar can miss better than ever
- Boat with confidence at night knowing that you can see harbor entrances and channels better in total darkness
- See with FLIR's award-winning maritime thermal night vision technology in the palm of your hand

First Mate cameras can help you see people in the water better than any other night vision technology. Finding someone in the water after dark with a searchlight is more a matter of luck than skill, but First Mate lets you search large areas quickly. Bottom line: there is no better tool around to help you find a person in the water.



Black Hot

White Hot



Marine Red

## The First Mate Advantage



### Portable Thermal Night Vision

- Better night vision right in the palm of your hand
- Long battery life; no vessel power supply required
- First Mate provides “go-anywhere” thermal night vision



### Night Vision When You Need It

- Instant-on for images when you need them
- Take First Mate with you from vessel to vessel
- Improved security while sitting at anchor or docked for the night



### 24-Hour Vision

- See more all day, all night
- Head out early, come home late, and stay safer
- Won't get blinded by bright marina lights

## First Mate MS

(Marine Scope)



Thermal Imaging Specifications	MS-224	MS-324
Detector Type	240 x 180 VOx Microbolometer	320 x 240 VOx Microbolometer
FOV	24° x 18°	
Focal Length	19 mm	
Waveband	7.5 - 13.5 μm	
Start-up Time	< 5 seconds	
Focus	Fixed	
Image Processing	FLIR Proprietary Digital Detail Enhancement	
<b>User Interface</b>		
Power Button	On/Off	
Picture Button	N/A	N/A
Zoom Button	Freeze Frame	2x E-Zoom
Polarity	Toggles White Hot, Black Hot, Marine Red Display	
Brightness	Adjusts Display Brightness	
<b>Image Presentation</b>		
Built-In Display	Color LCD Display	
Video Output	N/A	N/A
Video Refresh Rate	<9 Hz	
Image Polarity	White Hot; Black Hot; Marine Red	
On-Screen Symbology	Standard	
<b>Other</b>		
SD Card	N/A	N/A
Upgradeability	N/A	N/A
<b>Power</b>		
Battery Type	Internal Camera Battery / Li-Ion	
Battery Life (Operating)	5 Hours + (typical)	
Battery Life (Stand-By)	N/A	
<b>Environmental</b>		
Rating	IP-67	
Operating Temp.	-4°F to 122°F (-20°C to 50°C)	
<b>Physical</b>		
Weight (incl. lens)	12 oz (340 g)	
Size (L x W x H)	6.70" x 2.31" x 2.44" (172 x 58.7 x 62 mm)	
Packages Include	First Mate MS Handheld Maritime Thermal Night Vision Camera, Wrist Strap, USB Cable, Product CD, Drawstring Pouch; Charging Cradle (optional), Soft Carrying Pouch (optional)	
<b>Warranty</b>		
2 Year		
<b>Range Performance<sup>1</sup></b>		
Detect Man (1.8 m x 0.5 m)	~1,050 ft (320 m)	~1,500 ft (450 m)
Detect Small Vessel (4.0 m x 1.5 m)	~2,940 ft (895 m)	~4,200 ft (1.3 km)

## Flexible Thermal Night Vision For Any Vessel

The First Mate thermal night vision camera comes with everything you need to boat with confidence, 24-hours a day, including:

- Switch between White Hot, Black Hot, and Marine Red Image Presentation Modes
- On-Screen Symbology
- An Optional 2x Lens Extender For Improved Long-Range Imaging Performance\*

Advanced configurations are also available for those needing added functionality and flexibility:

- 2x E-Zoom
- Still Image Storage\*
- Video Capture and Storage\*
- Improved Environmental Survivability

\* See comparison chart for details.

Rugged, Lightweight Design

Intuitive Controls:

- 2x E-Zoom\*
- Image Polarity
- Still Image Storage and Video Capture\*



Fully Submersible Enclosure is Built to Last – First Mate Even Floats!

Four rechargeable AA NiMH batteries provide five hours of continuous operation; also uses non-rechargeable alkaline and Lithium Ion AA batteries.

- 1) SD Card Slot for Image Storage\*
- 2) USB Connector for Field Upgrades
- 3) Standard Tri-Pod Mount for External Installation
- 4) Composite Video Output
- 5) Power Input for Operation and Battery Charging
- 6) Optional 2x Lens Extender Available (Sold Separately)



The right palette for any environment:

- White hot
- Black hot
- Marine Red

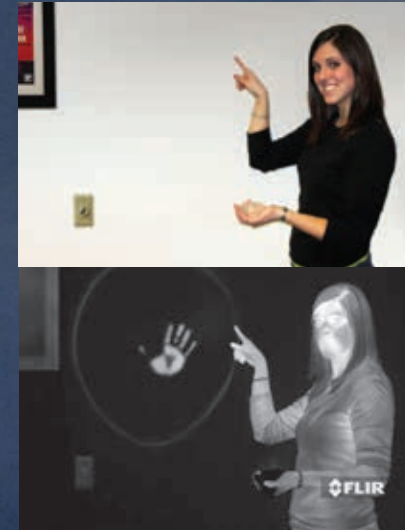
Choose from 5 levels of brightness to optimize your display.

LED tasklight helps you see when viewer is powered off.

Freeze Frame (MS-224 only)  
2x Digital Zoom (MS-324 only)

USB connectivity recharges a Li-Ion battery;  
5 hours of continuous use on a full charge.

Standard Tripod Mount



## About Thermal Night Vision

First Mate thermal night vision cameras make pictures by detecting and displaying tiny differences in heat, not light. Even the friction from a person's finger, and the heat from a hand on a wall leaves enough thermal energy behind to show up clearly to the First Mate.

Everything generates thermal energy, even ice! And even though thermal energy is invisible to the naked eye, First Mate thermal night vision cameras can detect it and turn it into a video image that is easy to understand, allowing you to see what your eyes never could.

Using the same technology as FLIR's best-in-class Navigator II, Voyager, and M-Series thermal night vision systems, First Mate gives you the information to help you see at night and stay safe.



Thermal Imaging Specifications	HM-224 Pro	HM-324 XP	HM-324 XP+	HM-307 XP	HM-307 XP+
Detector Type	240 x 180 VOx Microbolometer	320 x 240 VOx Microbolometer		320 x 240 VOx Microbolometer	
FOV		24° x 18° NTSC		7° x 5° NTSC	
Focal Length		19 mm		65 mm	
Waveband			7.5 - 13.5 µm		
Start-up Time (From Stand-By)			< 5 seconds		
Focus			Fixed		
Image Processing		FLIR Proprietary Digital Detail Enhancement			
<b>User Interface</b>					
Power Button			On/Off/Stand-By		
Picture Button	Still image capture to SD card	Freeze Frame	Still image capture and video capture to SD card	Freeze Frame	Still image capture and video capture to SD card
Zoom Button			2x E-Zoom		
Polarity		Toggles White Hot, Black Hot, Marine Red Display			
Brightness		Adjusts Display Brightness			
<b>Image Presentation</b>					
Built-In Display		Color LCD Display			
Video Output		NTSC or PAL composite video; RCA jack			
Video Refresh Rate		<9 Hz (NTSC and PAL)			
Image Polarity		White Hot; Black Hot; Marine Red			
On-Screen Symbology		Standard			
<b>Other</b>					
SD Card	Stores still images	—	Stores still images and video	—	Stores still images and video
Upgradeability	N/A	Upgrade to HM-324 XP+ via SD card slot software update	N/A	Upgrade to HM-307 XP+ via SD card slot software update	N/A
<b>Power</b>					
Battery Type		4 AA Batteries; NiMH, Li-Ion, or Alkaline			
Battery Life (Operating)		>5 Hours On NiMH batteries			
Battery Life (Stand-By)		120 Hours on NiMH batteries			
<b>Environmental</b>					
Rating		IP-67			
Operating Temp.	32°F to 122°F (0°C to 50°C)	-4°F to 140°F (-20°C to 60°C)			
<b>Physical</b>					
Weight (incl. lens)		1.45 lb (653 g) with batteries		2.2 lb (984 g) with batteries	
Size (L x W x H)		9.36" x 3.3" x 2.6" (10.5" x 3.3" x 2.6" w/ Extender)		11" x 3.33" x 2.62" (279.4 x 84.5 x 66.5 mm)	
Packages Include	HM-Series Handheld Thermal Camera, Hot Shoe Charging & Video Output Accessory, 4 Rechargeable AA Batteries, AC Power Adapter/Charger, Neck Lanyard, Operator's Manual, USB Cable, Video Output Cable.				
		Same as HM-224 Pro plus SD card			
<b>Warranty</b>					
		2 Year			
<b>Range Performance†</b>	24° Lens /12° Lens (2x Extender)	24° Lens /12° Lens (2x Extender)		7° Lens	
Detect Man (1.8 m x 0.5 m)	~1,050 ft (320 m)/~1,800 ft (550 m)	~1,500 ft (450 m)/~2,600 ft (790 m)		~4,800 ft (1.5 km)	
Detect Small Vessel (4.0 m x 1.5 m)	~2,940 ft (895 m)/~4,940 ft (1.5 km)	~4,200 ft (1.3 km)/~1.3 mi (2.2 km)		~2.4 mi (3.9 km)	

†= Actual object detection range performance may vary depending on camera set-up, environmental conditions, user experience, and type of display used. Visit www.flir.com for the most up-to-date specifications.

