



# First Mate

Compact Thermal Night Vision Camera



## See at night; stay safe

FLIR's First Mate family of handheld thermal night vision cameras give mariners on any type of vessel the power to see clearly in total darkness. Using the same technology as FLIR's best-in-class Navigator II, Voyager II, and M-Series thermal night vision systems, First Mate gives every boater the information they need to operate more safely night and day.

Using a high-quality thermal imaging core, First Mate provides better image clarity and detail than earlier systems, so boaters can see more of their surroundings than with any other night vision technology in the world. FLIR's advanced image-processing algorithms produce crisp, clear thermal video day and night.

### First Mate cameras help boaters:

- See people, vessels, and navigation hazards in total darkness. First Mate's VOx microbolometer provides high-quality imaging for a fraction of the cost of comparable cameras, giving sailors the detailed thermal imagery, cutting edge performance, and improved detection and recognition ranges they need in total darkness, even through smoke, dust, and light fog.
- See faint heat signatures from things that radar can miss like floating debris and bridge abutments in any lighting conditions; because First Mate cameras see heat, not light, they see things the naked eye can't.
- See more – and see farther – than with other night vision technologies. Because First Mate thermal cameras see clearly without any light whatsoever, they can see farther at night than technologies that need ambient light to work and they can see heat sources that these other cameras could never find.

First Mate provides go-anywhere thermal night vision for everyone on the water. For additional technical information, or to see a demonstration of this revolutionary new handheld thermal night vision camera, contact your FLIR representative today. You can also visit [www.FLIR.com](http://www.FLIR.com) to watch product videos, and see how thermal imaging can help you see at night and stay safe.



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System	HM-224	HM-224 Pro	HM-324 XP	HM-324 XP+	HM-307 XP	HM-307 XP+
Sensor Type	240 x 180 VOx Microbolometer		320 x 240 VOx Microbolometer			
FOV	24° x 18° NTSC				7° x 5° NTSC	
Start up from stand-by	< 1.5 seconds					
Focal Length	19 mm				65 mm	
Thermal Sensitivity	<50 mK @ f/1.0					
Image Processing	FLIR Proprietary Digital Detail Enhancement					
User Interface						
Power Button	On/Off/Standby					
Picture Button	Freeze Frame	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	Non-Operable	2x E-zoom				
Black Hot/White Hot	BH/WH					
Brightness	Brightness					
Image Presentation						
Built-In Display	LCD Display					
Video Output	NTSC or PAL composite video; RCA jack					
Image Polarity	White Hot/Black Hot; Selectable					
On-Screen Symbology	Standard					
Other						
SD Card	Stores still images		Stores still images and video			
Upgradeability	Upgrade to HM-224 Pro via software update through SD card slot	N/A	Upgrade to HM-324XP+ via software update through SD card slot	N/A	Upgrade to HM-307XP+ via software update through SD card slot	N/A
Power						
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					
Environmental						
Water Ingress	IP-67, Submersible (Floats)					
Operating Temp.	32°F to 122°F (0°C to 50°C)		-4°F to 140°F (-20°C to 60°C)			
Storage Temp.	-4°F to 158°F (-20°C to 70°C)		-40°F to 167°F (-40°C to 75°C)			
Drop	1 m drop					
Physical						
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 3.33" x 2.62" (238 x 84.5 x 66.5 mm)				10.96" x 3.33" x 2.69" (278.4 x 84.5 x 68.3 mm)	
Standard Package	First Mate Handheld Thermal Camera, Hot Shoe Charging & Video Output Accessory, 4 Rechargeable AA Batteries, AC Power Adapter/Charger, Car Adapter/Charger, Neck Lanyard, Operator's Manual, USB Cable, Video Output Cable, and SD Card					
Warranty	2 Year					
Accessories	2x Extender, Soft Case, Hard Case					
Range Performance (No Extender) <sup>†</sup>						
Detect Man (1.8 m x 0.5 m)	~1,033' (315 m)		~1,500' (450 m)		~4,757' (1,450 m)	
Detect Small Vessel (2.3 m x 2.3 m)	~2,940' (896 m)		~4,200' (1,280 m)		~2.4 mi (3,900 m)	
Range Performance (2X Extender) <sup>†</sup>						
Detect Man (1.8 m x 0.5 m)	~1,815' (553 m)		~2,590' (790 m)		N/A	
Detect Small Vessel (2.3 m x 2.3 m)	~4,938' (1,505 m)		~1.3 mi (2,150 m)		N/A	

<sup>†</sup>= Actual object detection range performance may vary depending on camera set-up, environmental conditions, user experience, and type of display use. Visit [www.flir.com](http://www.flir.com) for the most up-to-date specifications.



[www.flir.com](http://www.flir.com)  
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