FLIR E70354 M232

FLIR E70354 M232 Pan Tilt Thermal Camera User Manual

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your FLIR E70354 M232 Pan Tilt Thermal Camera. The M232 is a marine thermal night vision camera designed to enhance navigation and safety by providing clear thermal imagery in various conditions.

2. Product Features

- FLIR M232 Thermal IP Camera (320 x 240, 9Hz) with Pan, Tilt, and electronic zoom.
- Ethernet-enabled for simple integration with other marine electronics.
- Improves navigation and safety by aiding in the detection of bridges, docks, buoys, and other vessels, both day and night.
- Assists in locating individuals in the water more rapidly than traditional spotlights and radar alone.
- Small, lightweight design and IP video connectivity facilitate easy installation and integration with multiple Multi-Function Displays (MFDs).
- Features 2x digital zoom for extended range performance and detailed observation.
- Utilizes FLIR's latest generation Boson™ thermal core for superior image quality.
- Compatible with Raymarine Axiom MFDs for ClearCruise™ intelligent thermal analytics, offering enhanced awareness.

3. Setup

3.1 Unpacking

Carefully unpack all components from the packaging. Verify that all items listed in the 'Built-In Media' section of the specifications are present and undamaged.

3.2 Mounting

The FLIR M232 camera is designed for outdoor marine environments and supports various mounting options, including wall mount. Select a mounting location that provides an unobstructed view and ensures the camera is securely fastened to withstand marine conditions.

For ball-down mounting configurations, utilize the provided self-adhesive decals as precise guides for drilling and placement. A top-down riser kit is included to accommodate specific installation requirements, offering flexibility in camera positioning.



Image: FLIR M232 Pan Tilt Thermal Camera, illustrating its dome form factor and mounting base.

3.3 Wiring and Connectivity

The camera is Ethernet-enabled for seamless integration into your vessel's network. Use the provided RayNet-to-RJ45 adapter cable (100 mm) and the right-angled RayNet-to-RayNet cable (10 m) for network connections. Ensure all connections are secure and waterproof.

Connect the camera to a stable 12-volt DC power source using the right-angled 3-pin power cable (10 m). The camera operates efficiently at 3 watts. Verify the power supply meets the camera's requirements to prevent damage.

The camera also supports Wi-Fi connectivity for flexible integration. Refer to your network device's manual and the camera's specific Wi-Fi setup instructions for configuration.

4. Operating Instructions

4.1 Powering On

Once the camera is correctly installed and connected to a power source, apply power. The camera will initiate its startup

sequence. Allow a few moments for the system to boot up and stabilize before attempting operation.

4.2 Pan and Tilt Control

The FLIR M232 offers extensive pan and tilt capabilities: a continuous 360° pan range and a tilt range from +110° to -90°. Control these movements precisely via your connected video monitor or compatible Multi-Function Display (MFD) interface.

4.3 Electronic Zoom (E-zoom)

The M232 features a 2x electronic zoom function, allowing you to magnify the thermal image for enhanced detail at greater distances. Access and control this feature through your connected display's user interface.

4.4 ClearCruise™ Intelligent Thermal Analytics (with Raymarine Axiom MFD)

When integrated with a Raymarine Axiom MFD, the ClearCruise™ intelligent thermal analytics technology provides advanced situational awareness. This system delivers audible and visual alerts upon identifying 'non-water' objects such as other vessels, obstacles, or navigation markers within the camera's view. For specific setup and operation of ClearCruise™, consult your Raymarine Axiom MFD manual.

4.5 Video Output

The camera outputs video in H264 IP Video format. Ensure your display system or MFD is compatible with this video format for proper image display.

5. Maintenance

5.1 Cleaning

Regularly clean the camera lens and the exterior housing with a soft, lint-free cloth dampened with fresh water. Avoid using abrasive cleaners, solvents, or harsh chemicals, as these can damage the lens coating and housing finish.

5.2 Firmware Updates

Periodically check the official FLIR website for available firmware updates. Firmware updates often include performance enhancements, bug fixes, and new features. Follow the instructions provided by FLIR for any update procedures to ensure optimal camera performance.

5.3 Inspection

Conduct periodic visual inspections of all cables, connectors, and mounting hardware. Ensure that all connections remain secure and free from corrosion or damage. Verify that the mounting hardware is tight and the camera is stable.

6. Troubleshooting

6.1 No Image Display

- Verify that the camera is receiving 12V DC power and that all power connections are secure.
- Check all Ethernet or Wi-Fi connections between the camera and your display unit or network.
- Confirm that your display unit is correctly configured to receive video input from the camera's IP address.

6.2 Poor Image Quality

- Clean the camera lens thoroughly to remove any dirt, salt spray, or smudges.
- Ensure there are no physical obstructions in the camera's field of view.
- Consider environmental factors such as heavy fog, rain, or extreme temperatures, which can affect thermal imaging performance.

6.3 Pan/Tilt Not Responding

- Verify that all control connections to your MFD or dedicated control unit are properly secured.
- Ensure the camera has sufficient and stable power supply.

For further assistance or issues not covered here, please contact FLIR customer support.

7. Specifications

Feature	Value
Detector Type	320 x 240 VOx Microbolometer
Video Refresh Rate	9 Hz
Field of View	24° x 18°
E-zoom	2x
Pan Range	360° (continuous)
Tilt Range	+110° to -90°
Image Processing	FLIR Proprietary Digital Detail Enhancement
Connectivity Technology	Wired, Wi-Fi
Power Source	Corded Electric
Voltage	12 Volts
Wattage	3 watts
Waterproof Rating	IP67
Item Dimensions	7.87 x 5.91 x 4.72 inches
Item Weight	3.8 Kilograms
Model Number	RAY.E70354
UPC	723193814123
ASIN	B071DW6W7H

8. Warranty and Support

8.1 Warranty Information

The FLIR E70354 M232 Pan Tilt Thermal Camera is manufactured by FLIR Systems. The manufacturer provides a warranty for this product. Please contact FLIR Systems directly if you encounter any issues within 30 days of receipt. For comprehensive details regarding warranty terms, conditions, and duration, refer to the official FLIR documentation included with your product or visit their official website.

8.2 Customer Support

For technical support, troubleshooting assistance, or to initiate a warranty claim, please visit the official FLIR website or contact their customer service department. They can provide expert guidance and resources to help resolve any product-

related inquiries.

You can find more information and support resources atwww.flir.com.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question