

Ralcam F606B-S2M

Ralcam 360° Joystick Articulating Borescope

USER MANUAL

1. Introduction

This user manual provides detailed instructions for the safe and effective operation of your Ralcam 360° Joystick Articulating Borescope, Model F606B-S2M. This advanced inspection camera is designed for non-destructive testing in various applications, including automotive maintenance, industrial machinery inspection, and home repairs.

Key features include a 4-way 360-degree articulating probe, a 6.2mm diameter camera with 1080P resolution, adjustable LED lighting, and a detachable 4.3-inch IPS screen for clear viewing. The semi-rigid cable and joystick control enhance precision and ease of use in challenging environments.



Figure 1.1: Ralcam 360° Joystick Articulating Borescope (Model F606B-S2M)

2. Safety Information

Please read all safety warnings and instructions carefully before using the borescope to prevent injury or damage to the device. Keep this manual for future reference.

- Do not immerse the main unit (monitor and handle) in water or other liquids. The probe is IP67 waterproof, but the main unit is not.
- Avoid exposing the device to extreme temperatures, direct sunlight, or high humidity.
- Do not use the borescope in environments with flammable or explosive gases.
- Ensure the device is fully charged before use to avoid interruptions during inspection.
- Handle the probe with care. Do not bend it excessively beyond its designed articulation limits.
- Keep the camera lens clean to ensure clear images. Use the provided cleaning wipe or a soft, dry cloth.
- If the device exhibits abnormal behavior, discontinue use immediately and contact customer support.

- The probe features unique high-temperature protection and will shut down if the temperature exceeds 95°C to prevent damage.

3. Package Contents

Verify that all items listed below are included in your package:

- 1 x Ralcam Industrial Endoscope (Main Unit with Detachable Screen)
- 1 x Semi-Rigid 6.6FT Articulating Probe
- 3 x USB Cables (Type-C, Micro USB, Lightning)
- 1 x Carrying Case
- 1 x User Manual
- 1 x Cleaning Wipe
- 1 x 32GB Memory Card (pre-installed or included separately)

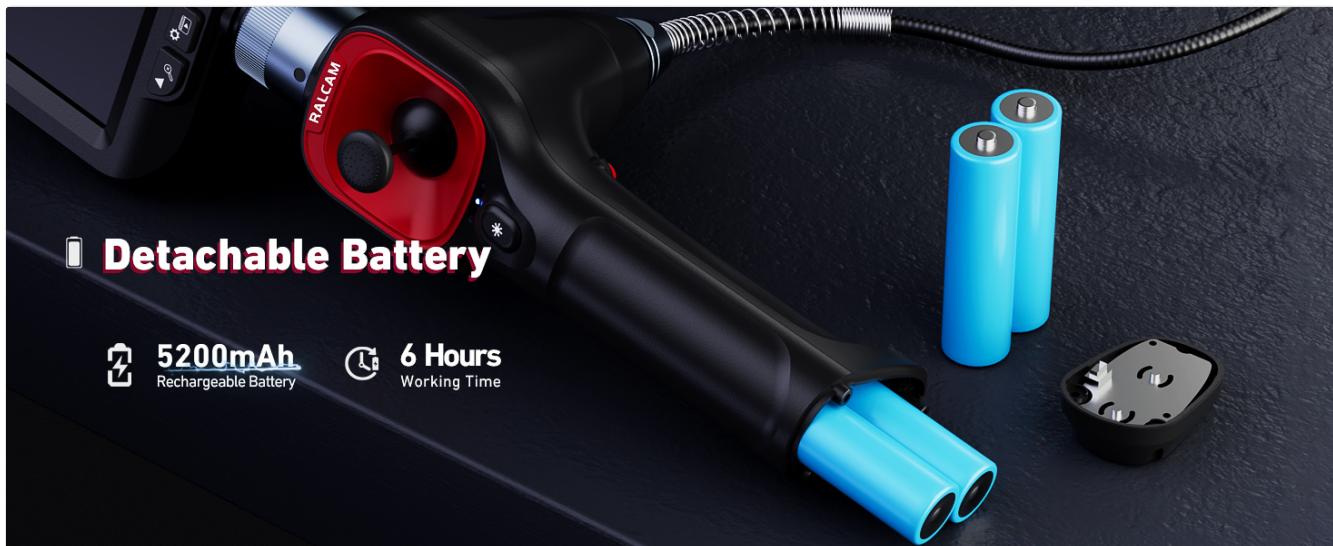


Figure 3.1: Included Package Contents

4. Product Overview and Components

Familiarize yourself with the main components of your Ralcam borescope:

- **Main Unit:** Houses the 4.3-inch IPS display, control buttons, and battery.
- **Detachable Screen:** The display unit can be detached from the handle for flexible viewing.
- **Handle:** Ergonomically designed for comfortable grip and houses the joystick control.
- **Joystick:** Provides 4-way 360-degree articulation of the probe tip.
- **Probe Cable:** Semi-rigid cable with tungsten wire mesh for durability and shape retention.
- **Camera Lens:** 6.2mm diameter, 1080P resolution, located at the tip of the probe.
- **LED Lights:** Six adjustable LED lights surrounding the camera lens for illumination.
- **Memory Card Slot:** For inserting the 32GB memory card to store photos and videos.
- **USB-C Port:** For charging the device and transferring data to a computer.

4.3" IPS Ultra-Wide Screen

For clearer and more detailed observation



Figure 4.1: 4.3-inch IPS Ultra-Wide Screen

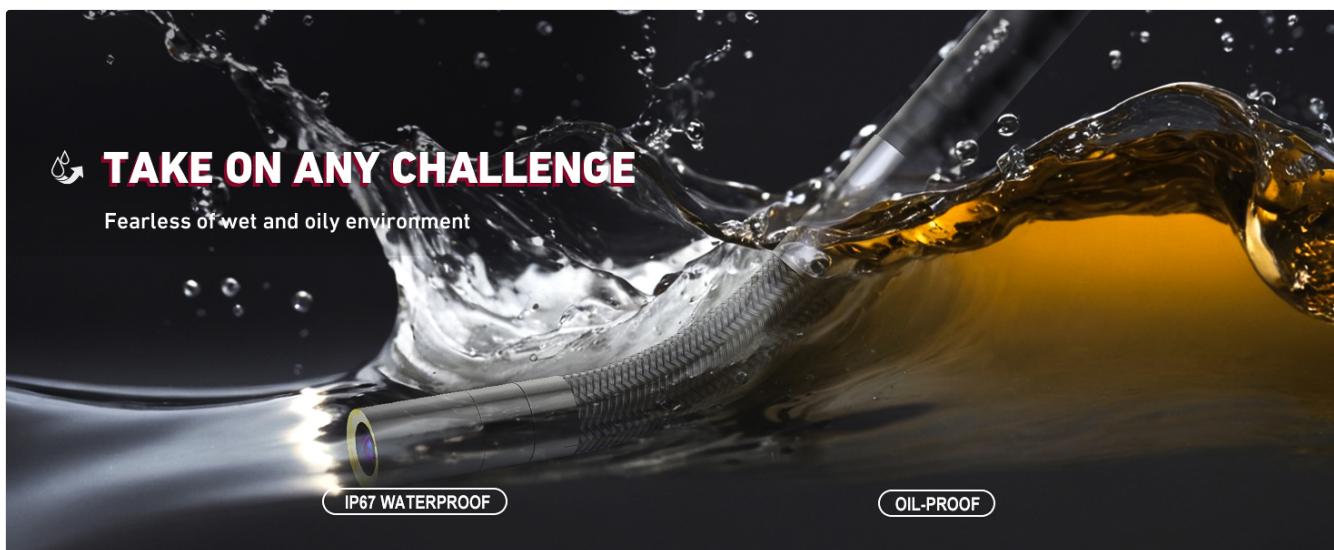


Figure 4.2: Modular Design for Detachable Screen and Probe

5. Setup

- Charge the Device:** Before first use, fully charge the borescope. Connect the provided USB-C cable to the borescope's USB-C port and a compatible USB power adapter (not included). The charging indicator will show progress. A full charge provides up to 4 hours of continuous use.

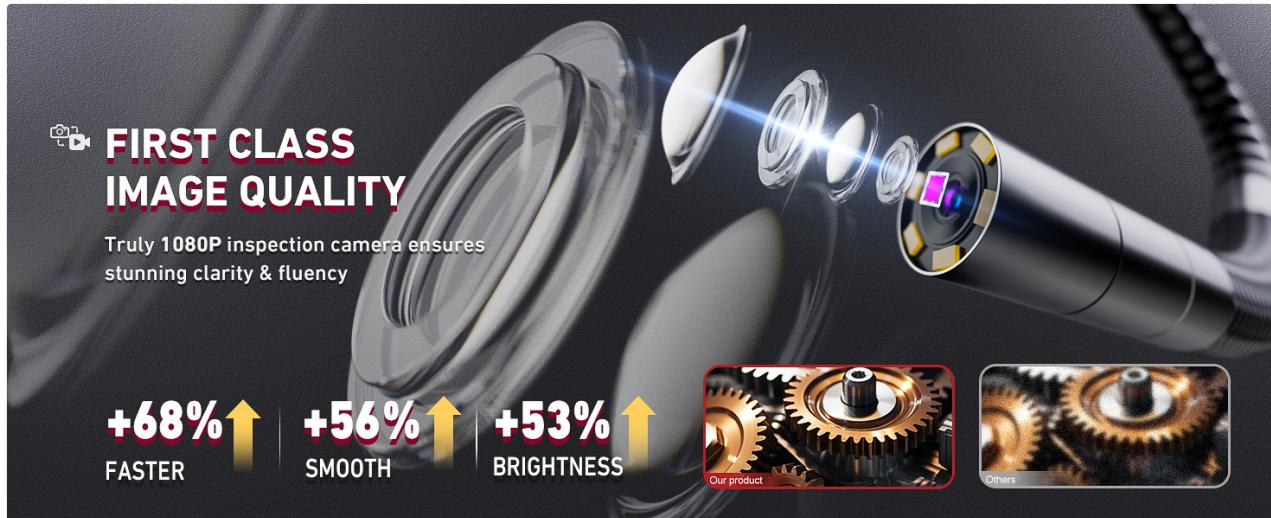


Figure 5.1: USB-C Charging and Data Transfer

- Insert Memory Card:** Locate the memory card slot on the side of the main unit. Insert the provided 32GB memory card until it clicks into place. This card is essential for saving images and videos.



Figure 5.2: Inserting the 32GB Memory Card

- Attach Probe:** Align the connector of the semi-rigid probe with the port on the main unit's handle. Gently push and twist to secure the connection. Ensure it is firmly attached to prevent accidental disconnection during use.

6. Operating Instructions

- Power On/Off:** Press and hold the power button (usually located on the main unit or handle) for a few seconds to turn the device on or off. The screen will illuminate.
- Adjust LED Lights:** Use the dedicated LED brightness control button (often marked with a light bulb icon) to cycle through the 6 adjustable LED light brightness levels (0%, 60%, 80%, 100%). Adjust as needed for optimal visibility in dark areas.



Figure 6.1: Adjustable LED Illumination

3. **Using the Joystick for Articulation:** The joystick on the handle controls the 4-way 360-degree articulation of the probe tip. Gently move the joystick in the desired direction (up, down, left, right) to steer the camera. The probe can be locked at any desired angle for detailed inspection.



Figure 6.2: 4-Way 360° Articulation Capability



Figure 6.3: Bending the Probe at Any Angle

4. Capturing Images and Videos:

- **Take Photo:** Press the photo capture button (usually marked with a camera icon) to take a still image.
- **Record Video:** Press the video record button (often marked with a video camera icon) to start recording. Press it again to stop recording.

5. **Viewing and Managing Media:** Access the playback mode (usually via a dedicated button or menu option) to review captured photos and videos. You can delete unwanted files from this mode.

6. **Data Transfer to PC:** Connect the borescope to your computer using the provided USB-C cable. The device should appear as a removable storage device, allowing you to transfer files directly.

7. Maintenance

- **Cleaning the Probe and Lens:** After each use, especially in dirty or oily environments, gently wipe the probe cable and camera lens with the provided cleaning wipe or a soft, lint-free cloth. For stubborn grime, a small amount of isopropyl alcohol can be used on the lens, applied to the cloth, not directly to the lens. Ensure the

lens is dry before storage.

- **Battery Care:** To prolong battery life, avoid fully discharging the battery frequently. Charge the device regularly, even if not in use for extended periods (e.g., once every 3 months). Store the device with a partial charge (around 50%).
- **Storage:** Store the borescope in its original carrying case in a cool, dry place, away from direct sunlight and extreme temperatures. Ensure the probe cable is coiled loosely and not kinked.

8. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Low battery; loose connections.	Charge the device fully. Ensure all cables are securely connected.
No image on screen.	Probe not connected properly; camera lens obstructed.	Reconnect the probe firmly. Clean the camera lens.
Articulation not working.	Probe cable kinked; internal mechanism obstruction.	Ensure the cable is not severely bent or kinked. Avoid forcing the joystick. If the issue persists, contact support.
Cannot save photos/videos.	Memory card full or not inserted correctly; card error.	Check if the memory card is inserted correctly. Delete old files to free space. Try reformatting the card (this will erase all data). If issues persist, try a different compatible memory card.
Poor image quality.	Dirty lens; insufficient lighting; incorrect focus distance.	Clean the camera lens. Increase LED brightness. Ensure the object is within the optimal focal range of the camera.
Device shuts down unexpectedly.	Low battery; overheating.	Recharge the battery. Allow the device to cool down if used in high-temperature environments (the probe has automatic high-temperature protection).

9. Specifications

Feature	Description
Model Number	F606B-S2M
Probe Diameter	6.2mm
Probe Length	6.6FT (Semi-Rigid)
Articulation	4-way, 360-degree joystick control
Video Resolution	1080p

Feature	Description
Display Screen	4.3-inch IPS Ultra-Wide Screen
LED Lights	6 adjustable high-visibility LEDs
Battery Capacity	5200mAh (up to 4 hours working time)
Storage	Supports 32GB memory card (included)
Waterproof Rating	IP67 (for probe only)
Operating Temperature	Probe has unique high-temperature protection (shuts down above 95°C)
Dimensions (Package)	13.7 x 11.1 x 3.62 inches
Weight (Package)	3.62 Pounds

10. Warranty and Support

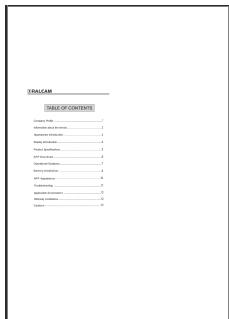
Ralcam products are designed for durability and performance. For information regarding warranty coverage, please refer to the warranty card included with your product or visit the official Ralcam website. Keep your purchase receipt as proof of purchase.

If you encounter any issues not covered in the troubleshooting section or require technical assistance, please contact Ralcam customer support. Contact details can typically be found on the product packaging, the official website, or the included user manual.

For the latest updates, FAQs, and additional support resources, please visit the [Ralcam Store on Amazon](#).

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Related Documents

	<p>Ralcam H4-A Series Articulating Borescope User Manual</p> <p>Comprehensive guide to the Ralcam H4-A series articulating borescope, detailing its features, specifications, operation, troubleshooting, and application environments for professional use.</p>
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