RunCam Nano2

RunCam Nano2 FPV Camera Instruction Manual

Model: Nano2

1. PRODUCT OVERVIEW

The RunCam Nano2 is a compact and lightweight FPV camera designed for use in FPV drones and other remote-controlled vehicles. It features a 1/3" CMOS sensor, 700TVL resolution, and an NTSC signal system, providing clear and reliable video feedback for pilots.

Figure 1: RunCam Nano2 FPV Camera with its compact design and wiring harness.

Key features include:

- **Signal System:** NTSC (Non-Switchable)
- **Image Sensor:** 1/3" 700TVL CMOS
- **Lens:** 2.1mm (M8) with a Field of View (FOV) of 155°
- **Dynamic Range:** Auto D-WDR (Digital Wide Dynamic Range)
- **Exposure Control:** Auto Gain Control (AGC) and Auto Electronic Shutter Speed
- **Weight:** Approximately 3.2g
- **Dimensions:** L14mm x W14mm x H16mm

Figure 2: Visual representation of key features including 1/3" CMOS sensor and 700TVL resolution.

2. SPECIFICATIONS

Parameter	Value
Image Sensor	1/3" CMOS
Horizontal Resolution	700TVL

Parameter	Value
Lens	2.1mm (M8) FOV 155° (Also available in 1.8mm FOV 170° variant)
Signal System	NTSC (Non-Switchable)
S/N Ratio	>50dB
Electronic Shutter Speed	Auto
Auto Gain Control (AGC)	Auto
Min. Illumination	0.01Lux@ 1.2F
D-WDR	Auto
Day/Night	Color
Power Input	DC 3-5.5V
Current Consumption	110mA @5V / 120mA @3.3V
Housing Material	ABS
Net Weight	3.2g
Dimensions	L14mm x W14mm x H16mm

Figure 3: The RunCam Nano2 camera demonstrating its lightweight design at 3.2 grams.
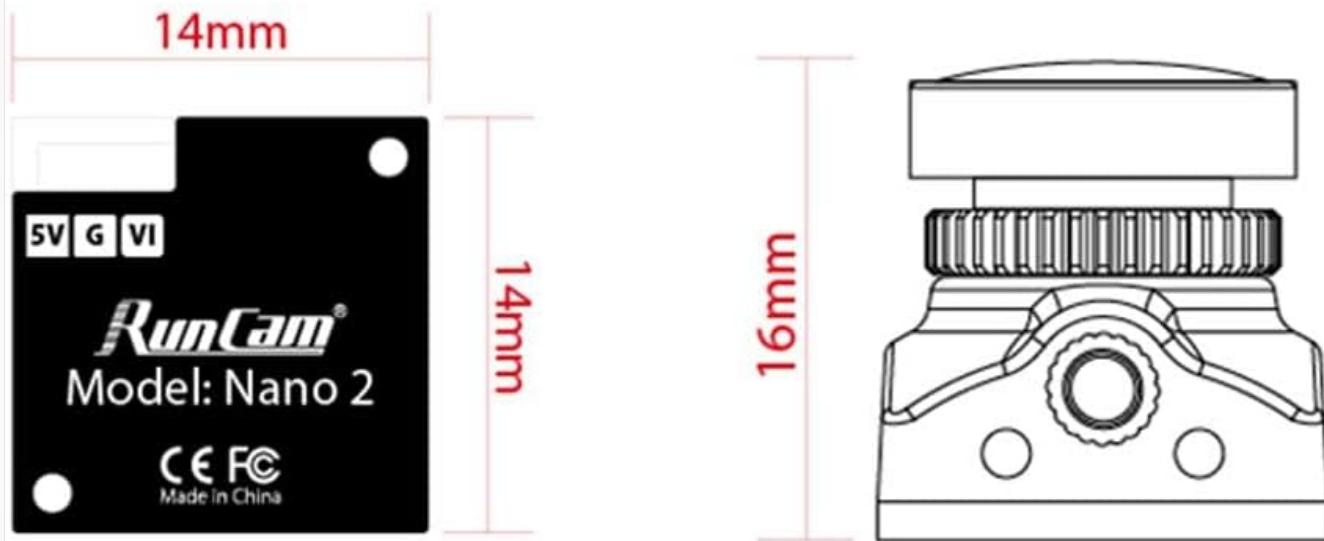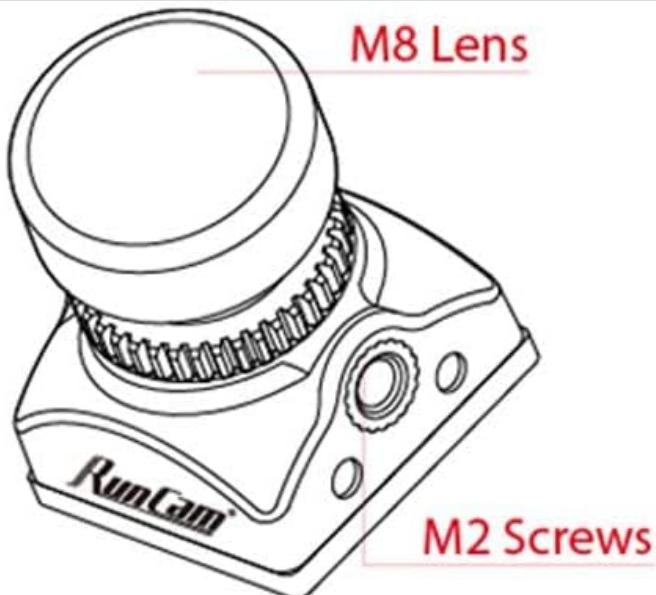
Figure 4: Detailed dimensions of the RunCam Nano2 camera.

3. SETUP AND INSTALLATION

This section guides you through the basic setup and installation of your RunCam Nano2 FPV camera.

3.1 Component Assembly for FPV System

To create a head-tracking FPV system for an RC car, you will typically need FPV goggles, an FPV camera (like the RunCam Nano2) with a Video Transmitter (VTX), and a 3-axis gimbal. The camera is attached to the gimbal, and the gimbal is then connected to the VTX. A custom 3D-printed base can help integrate all components securely.

Your browser does not support the video tag.

Video 1: This video demonstrates the assembly process of an FPV camera, VTX, and gimbal system, including mounting on an RC car and activating head tracking in FPV goggles.

3.2 Mounting the Camera

The RunCam Nano2 is designed for easy integration. Use the provided screws to secure the camera to your drone frame or custom mount. If using an adapter for larger mounting patterns, ensure it is securely fastened.

3.3 Wiring Connections

Connect the camera's wiring harness to your flight controller or VTX according to the pinout diagram provided with your flight controller/VTX. Ensure correct polarity for power (DC 3-5.5V) and video signal to prevent damage.

3.4 Head Tracking Activation (for compatible systems)

If your FPV goggles and gimbal system support head tracking, activate this feature within your goggles' menu. This allows the camera's view to follow your head movements, enhancing the immersive FPV experience.

4. OPERATING INSTRUCTIONS

Once installed and powered, the RunCam Nano2 will transmit video in NTSC format. Ensure your FPV goggles or monitor are set to NTSC to receive the correct signal.

4.1 First Person View (FPV) Operation

The camera provides a wide 155° FOV, offering an expansive view for navigating your FPV drone or RC vehicle. The Auto D-WDR and Auto Gain Control features help maintain clear image quality across varying light conditions.

Your browser does not support the video tag.

Video 2: This video demonstrates the FPV experience using a camera system mounted on an RC car, showcasing the real-time video feed.

5. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your RunCam Nano2 FPV camera.

- **Lens Cleaning:** Gently clean the camera lens with a microfiber cloth and a specialized lens cleaning solution. Avoid abrasive materials that could scratch the lens.
- **Connection Check:** Periodically inspect all wiring connections for looseness or damage, especially after crashes or rough handling.
- **Storage:** Store the camera in a dry, dust-free environment when not in use. Protect the lens from direct impact.

6. TROUBLESHOOTING

If you encounter issues with your RunCam Nano2, refer to the following common troubleshooting steps:

- **No Video Signal:**
  - Verify all power and video connections are secure and correctly wired.
  - Ensure your FPV goggles/monitor are powered on and set to the correct NTSC signal system and frequency.
  - Check for damage to the camera cable or VTX.
- **Poor Image Quality (Blurry, Jello Effect, Color Issues):**
  - Check if the lens is clean and free from smudges or debris.
  - Ensure the lens is properly focused. The lens can be rotated to adjust focus.
  - A "jello effect" can sometimes occur with CMOS sensors due to vibrations. Ensure the camera is securely mounted and isolated from excessive vibrations.
  - Verify power input is stable and within the specified DC 3-5.5V range.

- **Camera Not Powering On:**
  - Confirm the power source is providing the correct voltage (DC 3-5.5V).
  - Check for any short circuits or damaged wires in the power line.

7. WARRANTY AND SUPPORT

For warranty information, technical support, or further assistance, please visit the official RunCam website:

www.runcam.com

Please retain your proof of purchase for any warranty claims.