Tilta WLC-T03

Tilta Nucleus-M: Wireless Lens Control System

User Manual (Model: WLC-T03)

Introduction

The Tilta Nucleus-M is a highly customizable 3-channel wireless lens control system designed for professional cinematography. It provides precise control over focus, iris, and zoom functions of compatible cinema lenses. This system eliminates the need for a separate Motor Driver Receiver (MDR) by integrating motor drives directly into each motor, allowing for a more compact and efficient camera setup. The system supports both automatic and manual lens calibration, making it versatile for various lens types.
This manual provides detailed instructions for setting up, operating, maintaining, and troubleshooting your Nucleus-M system to ensure optimal performance and longevity.

Package Contents

The Tilta Nucleus-M system typically includes the following components:

- Wireless FIZ hand unit
- Brushless wireless motors (with 19mm rod support and 15mm rod bushings)
- Right wireless handle
- Left wireless handle
- Finger wheel and zoom toggle for handles
- Follow focus marking disks
- Power and motor connection cables (7-pin to P-tap, 7-pin to 7-pin)
- Photographic lens follow focus adapters
- 18650 quad battery charger (batteries NOT included)
- Handle to Arri Standard Rosette adapters

- Handle to gimbal bar adapters (compatible with 25mm/30mm rod diameters)
- Wireless FIZ hand unit strap
- Hard shell waterproof safety case

Image: Overview of the Tilta Nucleus-M system components, including the FIZ hand unit, motors, and hand grips, neatly arranged in their hard case.

Setup

1. **Battery Installation:** The FIZ hand unit and wireless hand grips require two 18650 rechargeable batteries each (not included). Insert the batteries into their respective compartments, ensuring correct polarity.
2. **Motor Attachment:** The motors are designed to clamp onto 19mm rods or 15mm rods (using the included bushings). Attach the motors to your camera rig's rod system, positioning them to align with the focus, iris, or zoom rings of your lens. The clamp-on design allows for easy attachment and detachment without disassembling other rig components.
3. **Powering the Motors:** Connect the P-tap power cable to one of the motors and to a compatible power source on your camera rig. You can daisy-chain power to additional motors using the short 7-pin to 7-pin cables.
4. **System Pairing:** Power on the FIZ hand unit, hand grips, and motors. Set all units to the same channel to establish communication. Refer to the on-screen menu of the FIZ unit for channel selection.
5. **Lens Calibration:** The motors support automatic and manual calibration. For lenses with hard end stops, use the auto-calibration feature. For lenses without hard stops, perform manual calibration by setting the close focus and infinity points.

Image: Close-up of the Tilta Nucleus-M FIZ hand unit, showing the focus wheel, display, and control buttons.

Image: Front view of a Tilta Nucleus-M motor, highlighting the gear and rod clamp mechanism.

Operating

The Nucleus-M system offers flexible control options for your lens functions:

- **FIZ Hand Unit:** Use the main hand unit for precise control of focus, iris, and zoom. The unit features a tactile focus wheel, a display for settings, and dedicated buttons for functions like marking A-B limits and electronic focus marking.
- **Wireless Hand Grips:** The two wireless hand grips can be used independently or in conjunction with the FIZ unit. They can be attached to rosette mounts for handheld operation or to gimbals using the

appropriate adapters. Control of focus, iris, and zoom can be split between the FIZ unit and the hand grips as needed.

- **Wireless Range:** The wireless range for both the hand unit and hand grips is approximately 1,000 feet (300 meters), suitable for various shooting scenarios, including drone or car-mounted shots.
- **Run/Stop Capability:** Remote start/stop functionality is available by connecting a compatible Nucleus-M R/S cable to an open 7-pin port on a motor. This allows you to control camera recording directly from the FIZ unit or hand grips.

Image: The left wireless handle of the Nucleus-M system, designed for ergonomic control during operation.

Image: The right wireless handle of the Nucleus-M system, featuring additional controls for lens functions.

Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the surfaces of the FIZ unit, motors, and hand grips. Avoid using harsh chemicals or abrasive materials. For gears, a small brush can be used to remove dust or debris.
- **Battery Care:** Always use the recommended 18650 rechargeable batteries and the provided charger. Do not overcharge or completely drain the batteries. Store batteries in a cool, dry place when not in use.
- **Storage:** When not in use, store the Nucleus-M system in its hard shell waterproof safety case to protect it from dust, moisture, and physical damage.
- **Cable Management:** Ensure all cables are properly coiled and stored to prevent kinks or damage to connectors.

Image: The Tilta Nucleus-M system components securely stored within its custom-fitted hard case, demonstrating proper storage.

Troubleshooting

- **Motors Not Responding:**
  - Ensure all units (FIZ, grips, motors) are powered on and set to the same channel.
  - Check battery levels in the FIZ unit and hand grips.
  - Verify that motors are receiving power via the P-tap cable.
  - If motors become 'confused', try restarting the entire system (power off and on all components).
- **Hand Controllers Lose Settings:**
  - This can occasionally happen after powering down. Reset the motor calibration and re-pair the controllers if necessary.
  - Ensure batteries are fully charged to prevent unexpected power loss.
- **Finicky Menu System:**
  - Familiarize yourself with the menu navigation through practice.
  - If a specific function is unresponsive, try navigating out of the menu and re-entering, or restart the FIZ unit.
- **Strap Detachment:**
  - While the FIZ unit comes with a strap, it is recommended to exercise caution and not solely rely on it for securing the unit, especially during active movement. Always maintain a firm grip or use additional securing methods when possible.

Specifications

Feature	Specification
Model Number	WLC-T03
Product Dimensions	14.5 x 11.5 x 6 inches
Item Weight	10.1 pounds
Batteries Required	6 Lithium Ion batteries (18650 type, not included)
Compatible Devices	Camera systems with cinema lenses
Wireless Range	Up to 1000 feet (approx. 300 meters)
Motor Gear Pitch	0.8 mod, 35 tooth, 32 pitch

Warranty and Support

Tilta products are manufactured to high-quality standards. For specific warranty information regarding your Nucleus-M Wireless Lens Control System, please refer to the warranty card included with your product or visit the official Tilta website. For technical support, troubleshooting assistance beyond this manual, or spare parts, please contact Tilta customer service through their official channels.