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> NEEWER 90 Degree 18mm 2X Macro Probe Lens (LS-51) User Manual

## NEEWER LS-51

# NEEWER 90 Degree 18mm 2X Macro Probe Lens (LS-51) User Manual

## INTRODUCTION

The NEEWER 90 Degree 18mm 2X Macro Probe Lens (LS-51) is designed for mobile video recording, allowing users to capture detailed macro shots in challenging environments. Its unique design enables access to narrow spaces while providing significant magnification and a wide field of view. This manual provides essential information for the proper setup, operation, and maintenance of your macro probe lens.

## PRODUCT OVERVIEW

The NEEWER LS-51 Macro Probe Lens features a slender barrel, 2x magnification, a 100° viewing angle, and a built-in LED light. It is constructed with high-definition optical glass and an aluminum barrel for durability and superior image quality.



Image: Overview of the NEEWER 90 Degree Macro Probe Lens attached to a smartphone.

## PACKAGE CONTENTS

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- 1 x 18mm Wide Angle & 90° 2x Macro Probe Lens for Phone
- 1 x Lens Support Bracket
- 1 x USB Type C Charging Cable
- 1 x Anti Roll Silicone Base
- 1 x Aluminum Alloy Carrying Case

### Package Contents

- 1 x 18mm Wide Angle & 90° 2x Macro Probe Lens for Phone
- 1 x Lens Support Bracket
- 1 x USB Type C Charging Cable
- 1 x Anti Roll Silicone Base
- 1 x Aluminum Alloy Carrying Case



Image: All items included in the NEEWER 90 Degree Macro Probe Lens package.

## SETUP AND INSTALLATION

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### Compatibility

This macro probe lens requires a NEEWER phone cage or case with a 17mm thread for attachment. It is compatible with various smartphone models, including iPhone 17 Pro Max, 16, 16e, 15, 14, 13 series, Samsung Galaxy S24, S25 Ultra, Android devices, and SANDMARC cases that feature a 17mm thread.

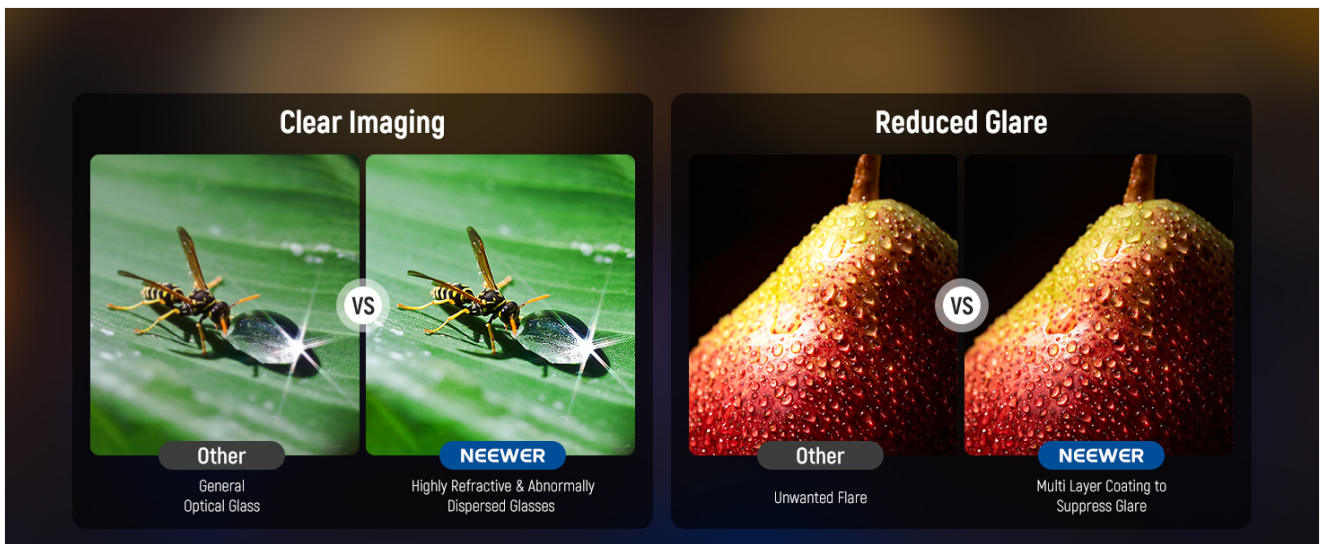


Image: Illustration of the 17mm threaded lens mount and compatible phone cages (PA053, PA044, PA042, PA088).

## Attaching the Lens

1. Slide the special lens mounting clip onto the end of the lens. Tighten the screw to lock it securely.
2. Rotate the lens onto the 17mm threaded lens mount on your phone's expansion frame or cage.

## Using the Lens Support Bracket

The included lens support bracket enhances stability and versatility. It features an Arca-type base, a 1/4" threaded hole, and a 3/8" threaded hole, allowing you to connect the lens to a rail system or tripod for more stable and creative shots.

1. Attach the lens support bracket to the lens barrel.
2. Connect the bracket to a tripod or slider via the Arca-type quick release plate or the 1/4" or 3/8" threaded holes.
3. Adjust the focus as needed before shooting.



Image: Step-by-step guide for attaching the lens and using the support bracket with a phone and tripod/slider.

## OPERATING INSTRUCTIONS

### Slender Barrel and Reach



The 340mm slender barrel and 18mm focal length allow the lens to enter deep and narrow areas, such as animal caves or pipes, enabling unique perspectives while maintaining a safe distance from the subject.

## Slender Lens Barrel

Allows you to go deep into places that are difficult to reach with conventional lenses for macro photography without disturbing the subject.

*The front of the lens is waterproof.*



Image: The slender lens barrel extending into a hollow log, demonstrating its reach for macro photography.

## 2x Magnification & 100° Field of View

The lens offers 2x magnification for detailed close-up shooting, ideal for miniature models, food, and small subjects. The 100° wide field of view allows you to capture a larger area or more subjects within your detailed macro frames.

# Excellent Close Up Performance

Get closer and shoot more details.

**100°**

Viewing Angle

**18mm**

Focal Length

**2x**

Magnification



Original



1x Magnification



2x Magnification

Image: Comparison of original, 1x, and 2x magnification shots of raspberries on a brownie, highlighting the detailed close-up performance and 100° viewing angle.

## Focusing

The lens features a rotatable focusing ring for precise manual focus adjustments, ensuring sharp and clear images even after magnification. The optimal focusing distance is approximately 0.7 inches (18mm).



## 0.7" / 18mm Focusing Distance

Still sharp and details after magnification.

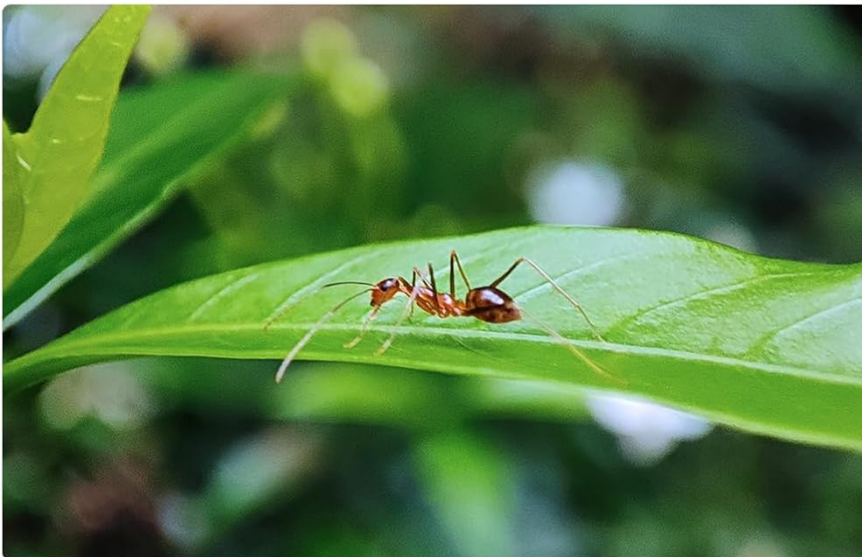


Image: A close-up of an ant on a leaf, demonstrating the lens's ability to capture fine details, alongside an image showing the rotatable focusing ring.

### Built-in LED Light

The front of the lens incorporates a built-in LED ring light with two brightness levels, providing additional illumination for focus assistance in dark or challenging scenes. The LED light charges via a USB Type-C port. For optimal battery longevity, fully charge the battery before first use.

# Built in LED Light

8 waterproof vibration-detecting lights for enhanced illumination in challenging scenes.

 **60mAh**  
Battery Capacity

 **Type C Port**  
Power Supply



**Function Button**  
On/Off & Brightness



**1st Brightness Level**  
(Press function button once)



**2nd Brightness Level**  
(Press function button once)

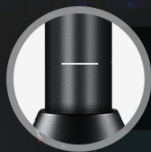
Image: The built-in LED light illuminating a subject, with illustrations of the function button, battery capacity (60mAh), USB Type-C port, and two brightness levels (1.5h and 3h illumination).

## Water Resistance

The probe lens features a water-repellent design, allowing it to be submerged up to 200mm (7.3 inches) for underwater aquatic photography. A waterproof marking on the lens indicates the maximum safe submersion depth.



## Metal Lens Body, Rugged And Waterproof



Waterproof  
Marker

Underwater:  
**7.3" / 187mm**

### Built in LED Light

8 waterproof LEDs provide additional lighting for clear and accurate shots.

1st  
Brightness  
Level

90°

2nd  
Brightness  
Level

90°

Image: The lens partially submerged in water, capturing fish, demonstrating its water-resistant capability up to 7.3 inches (187mm).

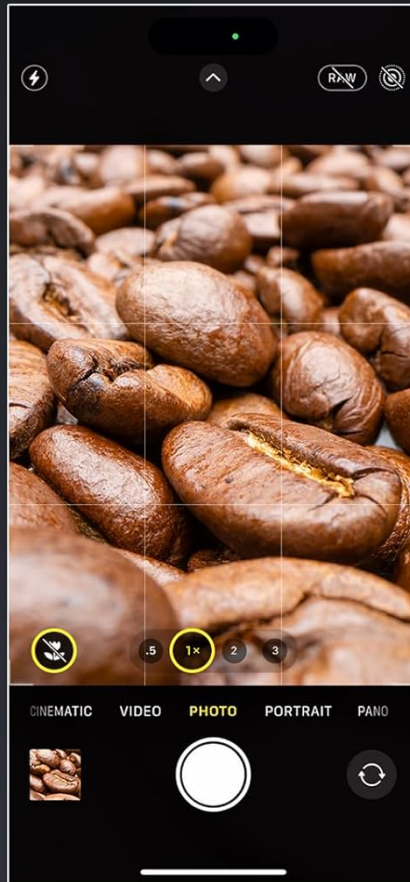
## Recommended Camera Settings

For optimal image quality, it is recommended to shoot at 1x zoom with macro mode disabled. Avoid using other digital zoom levels. On Android devices, ensure the 'Focus enhancer' is turned off if available.

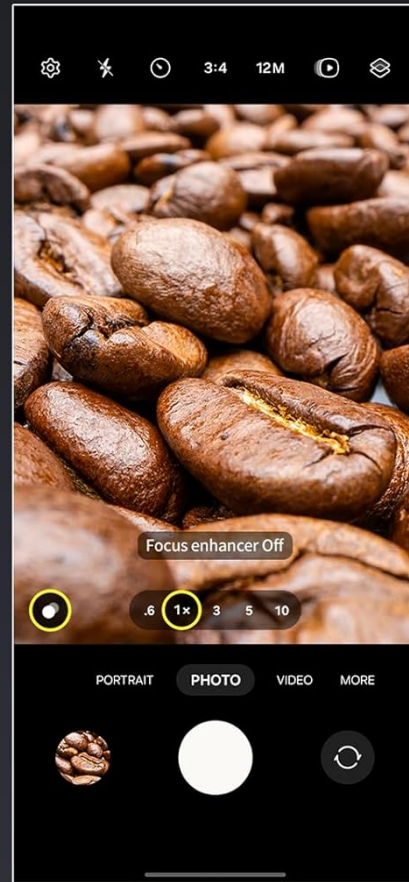


# 1x Zoom, Macro Off

It is recommended to shoot at 1x zoom for optimal image quality.  
Disable macro mode and avoid using other zoom levels.



Maintain macro control at  
**iOS**



Maintain macro control at  
**Android**

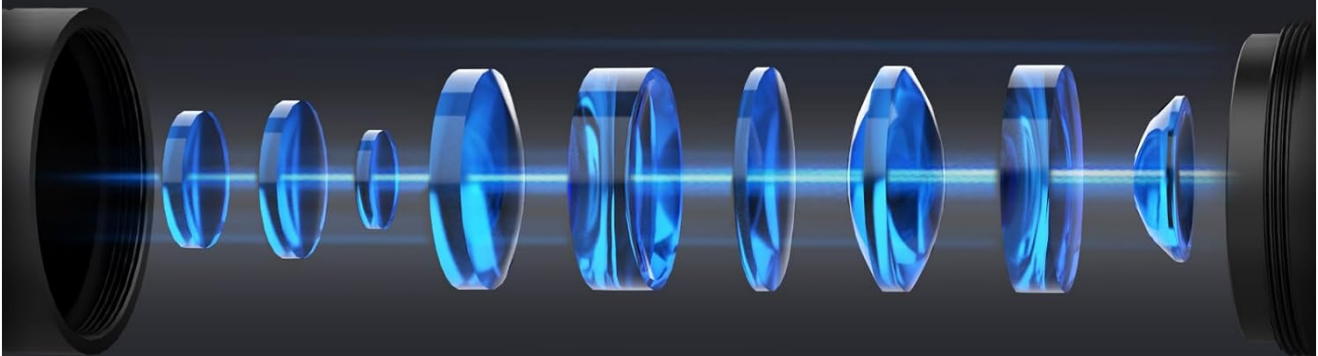
Image: Screenshots of iOS and Android camera interfaces, showing how to maintain macro control by selecting 1x zoom and disabling focus enhancer.

## OPTICAL DESIGN

The lens is skillfully crafted with 16 elements in 12 groups, featuring high-definition multiple layers optical glass. This design corrects aberrations, limits distortion to less than 1.6%, and reduces glare, resulting in sharp, clear images. It includes high refractive glass, anomalous dispersion glass, and Corning Gorilla Protection Glass for durability and optical performance.

# 16 Elements in 12 Groups Superior Performance

Corrects aberrations, limits distortion to <math><1.6\%</math>, and reduces glare for sharp, clear images.



**1** Pcs  
High Refractive Glass



**2** Pcs  
Anomalous Dispersion Glass



**1** Pcs  
Corning Gorilla Protection Glass

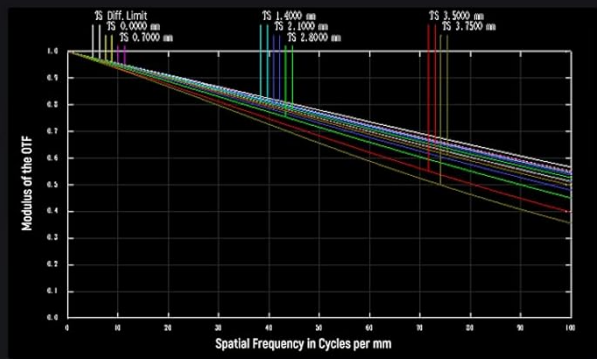


**M**ultilayer  
HD Nano Coating Process



**Other**  
General  
Optical Glass

**NEEWER**  
Highly Refractive & Abnormally  
Dispersed Glasses



**Diffraction MTF Data Chart**

Image: Diagram illustrating the 16 elements in 12 groups optical construction, including high refractive glass, anomalous dispersion glass, and Corning Gorilla Protection Glass.

## Widely Compatible

Fits most cell phone expansion frames with a **17mm threaded** lens mount.



Image: Comparison shots demonstrating the lens's ability to produce clear images and reduce glare compared to other optical glass.



## MAINTENANCE

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- **Cleaning the Lens:** Use a soft, lint-free microfiber cloth specifically designed for optical surfaces. For stubborn smudges, use a small amount of lens cleaning solution applied to the cloth, not directly to the lens.
- **Cleaning the Barrel:** Wipe the aluminum alloy barrel with a clean, damp cloth. Avoid abrasive cleaners.
- **Storage:** Store the lens in its aluminum alloy carrying case when not in use to protect it from dust, scratches, and impacts. Keep it in a cool, dry place away from direct sunlight and extreme temperatures.
- **Water Exposure:** After underwater use, rinse the water-repellent front section with fresh water and dry thoroughly before storing. Ensure the USB Type-C port cover is securely closed during and after use in wet conditions.
- **Battery Care:** Fully charge the built-in LED light battery before initial use and periodically if stored for long periods to maintain battery health.

## TROUBLESHOOTING

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- **Unclear or Blurry Images:**
  - Ensure the lens is securely attached to the phone cage and aligned with the phone's camera.
  - Adjust the rotatable focusing ring on the lens for sharp focus.
  - Verify that your phone's camera settings are optimized (1x zoom, macro mode off, focus enhancer off on Android).
  - Check for smudges or dust on the lens elements and clean as per maintenance instructions.
- **Insufficient Lighting:**
  - Activate the built-in LED light and adjust its brightness level.
  - For very dark scenes, consider using additional external lighting sources.
- **Lens Not Attaching Securely:**
  - Confirm that your phone cage or case has a 17mm threaded lens mount.
  - Ensure the mounting clip is correctly positioned and tightened.
- **Unstable Shots:**
  - Utilize the included lens support bracket and attach it to a tripod or slider for enhanced stability, especially during video recording.
  - Minimize camera shake by using a stable surface or a gimbal.
- **LED Light Not Working:**
  - Charge the LED light using the provided USB Type-C cable.
  - Ensure the function button is pressed correctly to turn on and adjust brightness.

## SPECIFICATIONS

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Feature	Detail
Model Name	LS-51 (90 Degree)
Focal Length	18mm
Lens Type	Macro Probe Lens
Magnification	2X
Field of View	100 Degrees
Lens Construction	16 elements in 12 groups
Distortion	<1.6%
Chromatic Aberration	2um
Lens Coating	485-656nm (Anti-reflection coating)
Focus Type	Fixed Focus (with rotatable focusing ring)
Built-in Light	LED Ring Light (60mAh battery, USB Type-C charging)
Water Resistance Level	Water Repellent (up to 200mm / 7.3 inches)
Compatible Mountings	17mm Thread (for phone cages)
Material	Aluminum Alloy Barrel, Optical Glass
Item Weight	2.82 Ounces (80g)
Dimensions (Height)	12.8" / 327mm
Diameter	1.4" / 35mm

## WARRANTY AND SUPPORT

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The NEEWER 90 Degree 18mm 2X Macro Probe Lens (LS-51) comes with a **1-Year Manufacturer Warranty**. For technical support, warranty claims, or any product-related inquiries, please contact NEEWER customer service through their official website or the platform where the product was purchased. Please retain your proof of purchase for warranty validation.