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LAOWA 25mmF2.8  
**2.5-5X** ULTRA  
MACRO

使用手册  
Instruction Manual

LAOWA 老蛙



## PREFACE

Thank you for purchasing LAOWA LW-FF 25mm f/2.8 2.5-5.0X Ultra Macro Lens. The lens can shoot extreme close-ups up to 2.5 - 5.0X and enables photographers to capture tiny subjects such as small insects, jewels etc.



*△ Prior to use, please read this instruction manual carefully before to ensure proper use. Keep the Instruction Manual in hand and refer to it whenever needed. If you are unable to solve the problem by read the manual, please contact our after-sales service for technical support. This a macro especially used lens for close-up photography that does not allow infinity focus structurally. (Shooting distance range: 173.0-223.8mm)*

## FEATURES

- LAOWA LW-FF 25mmf/2.8 2.5-5.0X is a high-magnification full frame ultra macro lens that can magnify the subject from 2.5X to 5X.
- Compact body and ease of use make the lens a perfect match for macro photography with great stability.
- For easy lighting setup, the lens is able to allow extremely long working distance ranging from 40mm (5X) to 45mm (2.5X) through special optical design.
- Full-metal construction makes the lens feel really solid with great durability. Multi-layer anti-reflection coating for each glass element contributes to minimizing flare and ghost.

## PERCAUTIONS

### ⚠ Safety Precautions

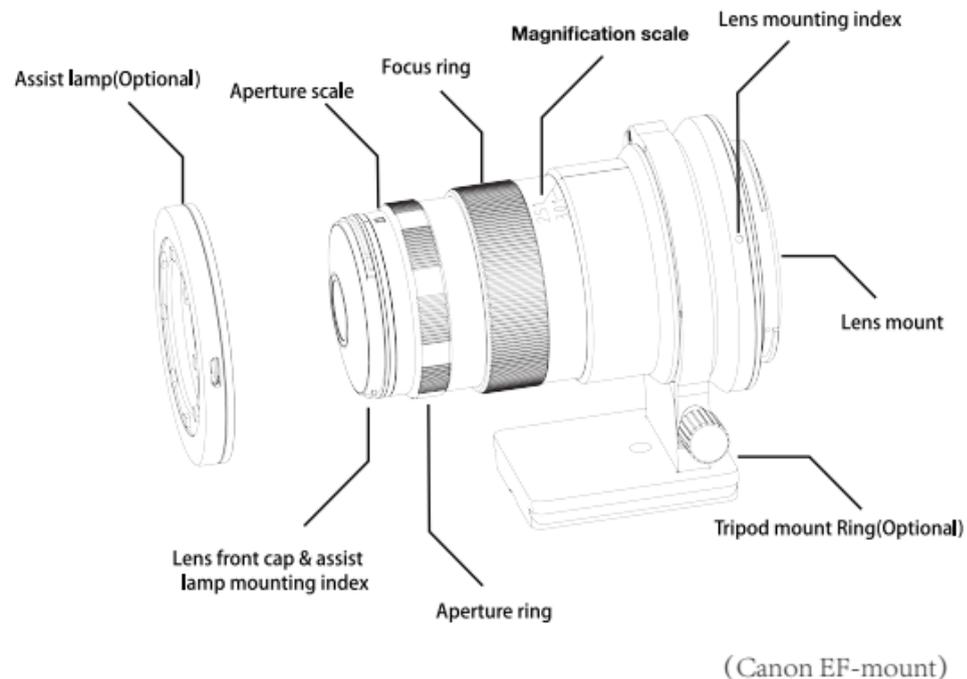
- Do not disassemble or modify the lens by yourself. If it is damaged by external force, do not touch any exposed part of the lens.
- Do not expose the lens to excessive heat such as direct sunshine or a parked car as this may deform the glass elements.
- When it is not attached to the camera, do not leave the lens under the sun without the lens cap attached. This is to prevent the lens from concentrating the sun's rays, which may cause a fire.
- When shooting with the built-in flash of the camera, the lens itself may block light and cause light fall-off. So external flash can be recommended in such case.

## PERCAUTIONS

### ■ Maintenance Instructions

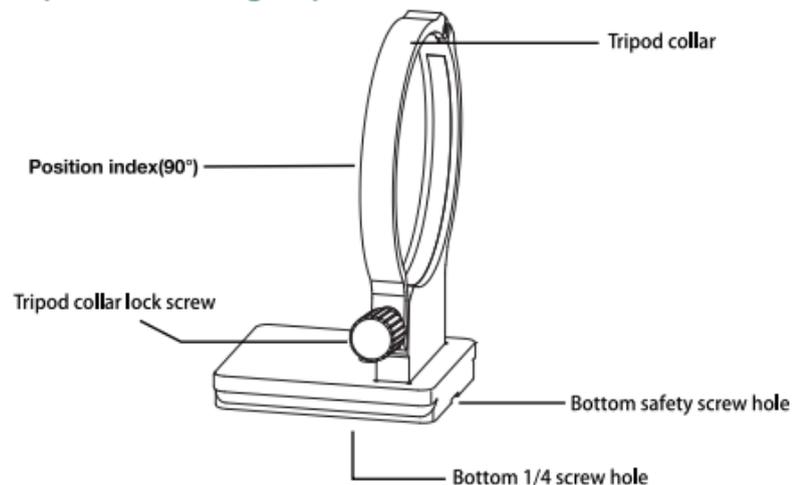
- Avoid touching the lens surface. Remove the dust on the lens surface with a lens cloth or a blower. Keep the lens cap attached because it is unable to attach UV filter.
- Using a circular motion with lens cloth or cloth, gently remove oil, fingerprints, and grime from the lens surface, working from the center outward.
- If the lens is taken from a cold environment into a warm one, condensation may develop on the lens surface and internal parts. To prevent condensation in this case, please take measures to protect against moisture before moving the lens.

## NOMENCLATURE



## NOMENCLATURE

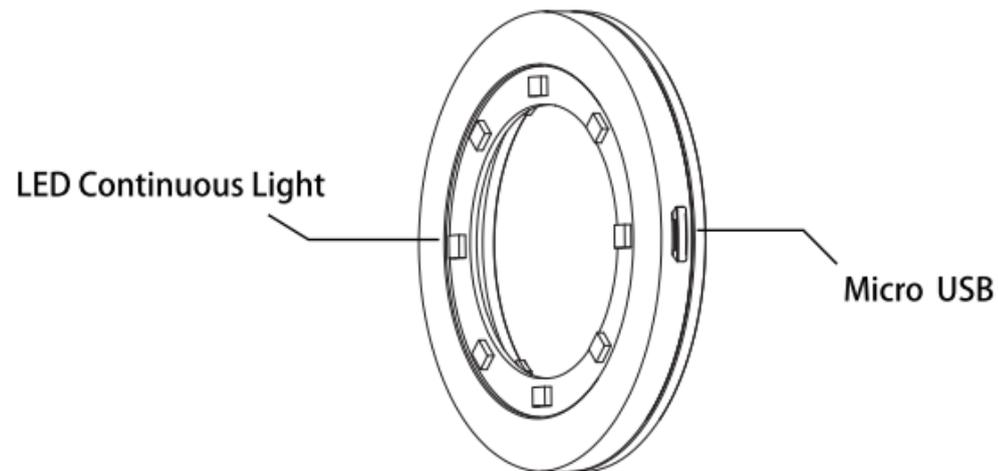
### ■ Tripod mount ring ( Optional )



- *To prevent the camera from falling, please hold the camera tightly when removing the tripod mount ring.*
- *Remove the safety screw on the bottom first and then attach then quick release plate if needed.*
- *When shooting vertically, turn the camera and lift the knob upwards and then line up the optical axis with the 90° position index on the tripod mount ring.*

## NOMENCLATURE

### ■ Assist lamp (Optional)



- *Refer the instructions of lens' front cap to that of this assist lamp.*
- *Please select 5V 2.1A output external power supply.*
- *Due to limited luminance, the lamp is more used for focus assist and it is recommended that you shoot with a extra flash.*

## INSTRUCTIONS

### ■ Mounting and Detaching the Lens

Choose the corresponding lens mount according to your camera body, and refer to your camera's instructions on mounting and detaching the lens.

### ■ Focusing

Turn the focus ring on the lens to get focus as LAOWA is a MF lens. There are two ways of focusing, you can give priority to magnification or to framing.

- *Limited to close-up shots, it allows a focusing distance range of 173.0mm to 223.8mm and can not focus to infinity.*
- *Gently turn the focus ring to prevent the focus mechanism from damage.*
- *When making high magnification shots, please shoot carefully because you are so close to the subject under the extremely short working distance.*
- *Magnification refers to the ratio between the subject's size in reality and the size of the subject's projection on the image sensor.*

## INSTRUCTIONS

### ■ Focusing Instructions

#### ● Method 1: Magnification Priority

1. Set the magnification first. Turn the focus ring to the required magnification.
2. Focus the subject roughly. While looking through the viewfinder or using live view, move the camera back or forward to find the proper focus.
3. Focus the subject finely. Turn the focus ring to get sharp focus.

#### ● Method 2: Framing Priority

While looking through the viewfinder or using live view to frame and focus, turn the focus ring, frame the subject and then follow steps 2 and 3 above.

- *To prevent camera shake, using the tripod, shutter release, mirror lock-up and silent mode are recommended.*
- *When shooting as method 1 (magnification priority), a focusing rail slider will make focusing easier.*
- *For high magnification shots, the actual aperture will become darker, so please refer to exposure compensation table to make adjustments accordingly.*
- *To reduce shake when shooting, please use a tripod and a flash.*
- *Manual exposure mode is recommended to obtain accurate exposure.*

## INSTRUCTIONS

### ■ Depth-of-Field

As macro photography comes with shallow depth-of-field, so you need to focus carefully to achieve ideal sharpness. Please refer to the depth-of-field table to understand DOF in advance.

Depth-of-Field Table (Unit: mm)						
Magnification F-number	2.5X	3.0X	3.5X	4X	4.5X	5X
f/2.8	0.090	0.080	0.070	0.060	0.060	0.050
f/4.0	0.129	0.114	0.100	0.086	0.086	0.071
f/5.6	0.180	0.160	0.140	0.120	0.120	0.100
f/8	0.257	0.229	0.200	0.171	0.171	0.143
f/11	0.354	0.314	0.275	0.236	0.236	0.196
f/16	0.514	0.457	0.400	0.343	0.343	0.286

## INSTRUCTIONS

### ■ Exposure Compensation Calculation

#### Magnification and Effective F-number

The aperture displayed by the camera assumes that the focus is set to infinity ( $\infty$ ). The actual aperture (effective f-number) becomes darker (effective f-number increases) at closer focusing distances (magnification increases). However, for closeup photography, you can not ignore the change in the effective f-number and need to increase EV based on the circumstance. [ For understanding of actual EV, the exposure compensation table and metering table(continued on the last page) shown below are for your reference. ]

Exposure Compensation Table							
Magnification		2.5X	3.0X	3.5X	4.0X	4.5X	5.0X
Effective F-number		9.8	11.2	12.6	14	15.4	16.8
Exposure Compensation	1/2 Stop	+7/2	+4	+4	+9/2	+9/2	+5
	1/3 Stop	+10/3	+4	+4	+14/3	+5	+5

## INSTRUCTIONS

### ■ Flash

Characterized by shooting exceptionally small subjects, such macro lens is prone to camera shake, so shooting with a flash is recommended.

Compared with normal shooting, the proper exposure for macro photography depends on the subject itself. It is difficult to obtain correct exposure the first time so please keep practicing.

- *Since diffusion materials may reduce the light of the flash, so selecting a macro flash with high output is recommended.*
- *As angle, distance and direction are the several key factors to consider in macro lighting setup, using the flash with long arm and more light unit is recommended.*
- *Select the flash that is compatible with your camera.*

## SPECIFICATIONS

LW-FF 25mmf/2.8 2.5-5.0X ULTRA MACRO	
<b>Focal Length/Aperture</b>	25mm, f/2.8
<b>Magnification</b>	2.5X - 5.0X
<b>Angle of View</b>	10.3°(FF 2.5X)
<b>Lens Construction (Group/Element)</b>	6/8 (including 1 pc of Extra Low Dispersion Glass)
<b>Aperture Blade</b>	8
<b>Min. Aperture</b>	f/16
<b>Min. Shooting Distance</b>	173.0 - 223.8mm
<b>Working Distance</b>	45mm ( 2.5X ) - 40mm ( 5.0X )
<b>Focusing</b>	MF
<b>Max. Diameter</b>	Φ58.2mm (F-mount)
<b>Length</b>	82-139mm (F-mount)
<b>Weight</b>	About 400g

## 测光表 METERING TABLE

测光表 Metering Table												
EV (ISO 100)		光圈值 F-number										
		f/1	f/1.4	f/2	f/2.8	f/4	f/5.6	f/8	f/11	f/16	f/22	f/32
曝光时间 Exposure Time	15s	-4	-3	-2	-1	0	1	2	3	4	5	6
	8s	-3	-2	-1	0	1	2	3	4	5	6	7
	4s	-2	-1	0	1	2	3	4	5	6	7	8
	2s	-1	0	1	2	3	4	5	6	7	8	9
	1s	0	1	2	3	4	5	6	7	8	9	10
	1/2s	1	2	3	4	5	6	7	8	9	10	11
	1/4s	2	3	4	5	6	7	8	9	10	11	12
	1/8s	3	4	5	6	7	8	9	10	11	12	13
	1/15s	4	5	6	7	8	9	10	11	12	13	14

## 测光表 METERING TABLE

continued from previous page (接上页)

测光表 Metering Table												
EV (ISO 100)		光圈值 F-number										
		f/1	f/1.4	f/2	f/2.8	f/4	f/5.6	f/8	f/11	f/16	f/22	f/32
曝光时间 Exposure Time	1/30s	5	6	7	8	9	10	11	12	13	14	15
	1/60s	6	7	8	9	10	11	12	13	14	15	16
	1/125s	7	8	9	10	11	12	13	14	15	16	17
	1/250s	8	9	10	11	12	13	14	15	16	17	18
	1/500s	9	10	11	12	13	14	15	16	17	18	19
	1/1000s	10	11	12	13	14	15	16	17	18	19	20
	1/2000s	11	12	13	14	15	16	17	18	19	20	21
	1/4000s	12	13	14	16	16	17	18	19	20	21	22
	1/8000s	13	14	15	16	17	18	19	20	21	22	23