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LAOWA CF 60mm F2.8  
Super Macro 2X

使用手册  
Instruction Manual

**LAOWA 老蛙**


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design and specifications at any time without notice and  
to the final interpretation of the *Instruction Manual*.



## 前言

真诚地感谢您选 LAOWA CF 60mm F2.8 Super Macro 2X, 为了充分地理解本产品的使用方法和注意事项, 在使用前请仔细阅读本说明书。



 为了操作上的安全, 使用本产品前请务必仔细阅读使用手册与注意事项, 并将手册放在需要时容易取得的地方。如遇到不能解决的问题请通过售后电话获取技术支持。

## 主要特色

- CF 60mm F2.8 Super Macro 2X是针对APS-C画幅设计的数码单反交换镜头,可以从无穷远到2:1倍摄影倍率均可很好成像的超微距镜头,无需附加增倍镜就可以实现惊人的2倍摄影倍率。
- 为保证从无穷远到近距离优异的成像素质,此镜头采用了主合焦组和辅助合焦组两组移动合焦组,彻底地补正了因合焦而引起的像面弯曲,球差等像差的过度产生。不论是无穷远还是近距离的成像性能,均是此规格微距镜头的顶级性能。
- 此款镜头的机械结构全部采用金属部件,确保了镜头的组装精度和耐用性。
- 每块镜片均采用低反射多层膜,彻底的消除了鬼影和眩光。换算成35mm规格,可覆盖相当于约90mm的视角,倍率相当于惊人的3倍。
- 为实现润滑自然的前后离焦虚化背景,充分的考虑到因球面像差引起的亮边轮状光斑,补正了因慧差引起的拖尾光斑和因像散产生的二线虚化背景。

## 注意事项

### △ 安全注意事项

- 镜头以及安装镜头的相机,避免将镜头直接对着太阳和强光,以防灼伤眼睛或者烧坏相机的CCD/CMOS。
- 在太阳或者强光下,不使用时镜头或者安装好镜头的相机最好将镜头盖子盖好,以防灼伤CCD/CMOS或者引发火灾。

### △ 使用注意事项

- 镜头从寒冷的环境突然转移到温暖的环境时,镜头的外部以及内部镜片将会凝结水雾,所以不用时做好防湿保护。
- 防止直接强光照射,长时间暴晒的话,过高的温度会使镜片和其他部件伸缩变形,出现预想不到的故障。



### ■ 镜头的装卸

针对不同厂家的机身请选用对应的卡口, 安装方法请参照各家机身的使用方法。

### ■ 对焦方式

此款镜头是全手动对焦镜头, 合焦时, 缓慢旋转对焦环, 不要过猛过快的旋转对焦环, 避免用力过猛损坏对焦环部件。

### ■ 摄影说明

#### ● 一般摄影模式

35mm格式换算, 此款镜头相当于约90mm的中望远镜头的画角, 可以拍人像特写等。

#### ● 微距摄影模式

最大摄影倍率为2:1倍, 最短摄影距离为18.5CM, 从被拍物体到镜头前端距离最近约5CM。合焦方法可以分构图优先和倍率优先。

(构图优先摄影: 观看取景器中画面, 优先考虑构图, 然后手动合焦。)

(倍率优先摄影: 将放大倍率设定好, 利用云台合焦。)

## 镜头规格

### 曝光补偿计算方法

摄影倍率和实效FNo.

照相机表示的光圈值是镜头在无穷远( $\infty$ )合焦时的光圈值,实际光圈值(实效FNo.)随着摄影距离的靠近(摄影倍率的增大),光圈将逐渐变暗(实效FNo.数值变大),在一般摄影距离的情况下,曝光数值几乎没有影响,可以忽略,但是在微距摄影时,实效Fno.变化比较大,需要适当曝光补偿。

摄影倍率		0.25	0.5	0.75	1	1.25	1.5	1.75	2
实效FNo.		3.5	4.2	4.8	5.5	6.1	6.8	7.5	8
曝光补偿 (段)	1/2段表示	+1/2	+1	+3/2	+2	+2	+2	+2	+2
	1/3段表示	+2/3	+1	+5/3	+2	+2	+2	+2	+2
需要延长曝光时间或加闪光灯									

1/3段的刻度来考虑的话、下表为常用的参考表(ISO感度为100时)

Ev 值	1	2	3	4	5	6	7	8	9																
光圈F	1.4	1.6	1.8	2	2.2	2.5	2.8	3.2	3.5	4	4.5	5	5.6	6.3	7.1	8	9	10	11	13	14	16	18	20	22
快门速度	1/2	1/2.5	1/3	1/4	1/5	1/6	1/8	1/10	1/13	1/15	1/20	1/25	1/30	1/40	1/50	1/60	1/80	1/100	1/125	1/160	1/200	1/250	1/320	1/400	1/500


镜头编号	CF 60mm F2.8 Super Macro 2X
焦点距离	60mm
视场角	25.3°
镜头结构	7组9片
光阑叶片	14
最大光圈	2.8
最小光圈	22
最近摄影距离(物像距离)	18.5cm
最大放大倍率	2.0倍
合焦驱动方式	手动(MF)
滤镜直径	62mm
镜头尺寸(直径/长)	约95×70mm
重量(不含罩子)	约503克
卡口	佳能EF口 尼康F口 索尼E口 A口 宾得PK口



## Operation Manual

Thank you for your selecting LAOWA CF 60mm F2.8 Super Macro 2X. Please carefully read this manual to ensure a full understanding of the usage and cautions.



 为了操作上的安全,使用本产品前请务必仔细阅读使用手册与注意事项,并将手册放在需要时容易取得的地方。如遇到不能解决的问题请通过售后电话获取技术支持。

## Features

- LAOWA CF 60mm F2.8 Super Macro 2X is an interchangeable DSLR one designed for APS-C size, a super macro lens capable of producing fine images from infinity to 2:1 magnification and realizing an amazing 2-fold magnification with no barlow attached.
  - To ensure the fine image from infinity to a close range, the lens adopts moveable in focus groups, namely, a prime one and an auxiliary one, which drastically correct the excessive field curvature and spherical aberration due to in-focus. For the imaging at infinity or a close distance, the lens will display its fantastic performance.
  - The mechanical structure of the lens uses metal components, ensuring the assembly accuracy and reliability.
  - For each lens, low-reflection, multi-layer film is adopted to completely erase the ghosting and flare. When converted into a 35-mm specification, it can cover a view angle of about 90 mm, the magnification being amazingly 3 times.
- To realize the lubrication of natural backgrounds in back and front out-of-focus blurring, full consideration has been given to the round-shaped spots on the brightened margin caused by spherical aberration, and the tailing flares arisen from coma and the two-line blur from astigmatism are thus corrected.

#### △ Safety Note

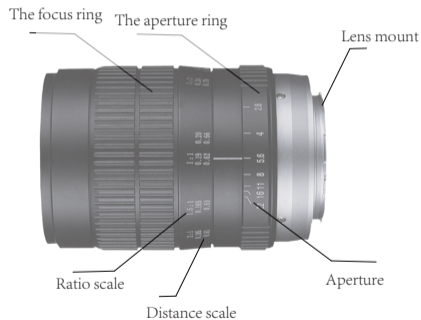
- For a lens or a camera installed with a lens, avoid a direct exposure of the lens to the sun or a high light, so as to protect eyes and CCD/CMOS.
- In the sun or a high light, it would be better to cover up the lens and the camera fixed with the lens with the lid when not used, to avoid burning the CCD/CMOS or a fire.

#### △ Usage Note

- When suddenly transferred to a warm surrounding from a cold one, both the exterior and the interior would be condensed with water mist, and thus keep the lens dry while not used.
- Avoid the direct exposure to a high light; if under the blazing sun for quite a long time, the excessive temperature would deform the lens and other component, resulting in an unexpected failure.



## Name of Components



## Directions for use

### ■ Lens Assembling & Disassembling

Select the corresponding mount according to the camera body, and refer to the usage instructions on the body provided by the maker for the assembly method.

### ■ Focusing Mode

The lens is of a fully-manual focusing type; at the in-focus, slowly turn the focusing ring and do not make a hard and rapid movement to avoid damaging the component.

## ■ Shooting Instructions

- General Mode

Converted into a 35mm format, the lens, equal to a prospective of a medium and telephoto lens of about 90mm, can be used for shooting a portrait close-up, etc.

- Macroshot Mode

The maximum image magnification is 2:1, the minimum shooting distance is 18.5CM, and the shortest distance between an object and the front end of the lens is about 5 CM.

- The in-focus method includes a composition priority and a magnification priority.

(Composition-priority shooting: look at the picture in the viewfinder, prioritize the composition, and then manually do the in-focus.)

(Magnification priority shooting: set the magnifying power and use the gimbal for in-focus.)

Image Magnification		0.25	0.5	0.75	1	1.25	1.5	1.75	2
Real-effect FNo.		3.5	4.2	4.8	5.5	6.1	6.8	7.5	8
Exposure Compensation (Segment)	1/2 Segment Indication	+1/2	+1	+3/2	+2	+2	+2	+2	+2
	1/3 Segment Indication	+2/3	+1	+5/3	+2	+2	+2	+2	+2

Considering the scale on the 1/3 Segment, the following is a common reference table (ISO sensitivity being 100)

Ev 值	1		2		3		4		5		6		7		8		9								
光圈 F	1.4	1.6	1.8	2	2.2	2.5	2.8	3.2	3.5	4	4.5	5	5.6	6.3	7.1	8	9	10	11	13	14	16	18	20	22
快门速度	1/2	1/2.5	1/3	1/4	1/5	1/6	1/8	1/10	1/13	1/15	1/20	1/25	1/30	1/40	1/50	1/60	1/80	1/100	1/125	1/160	1/200	1/250	1/320	1/400	1/500

## Specifications of Product Models

Lens No.	CF 60mm F2.8 Super Macro 2X
Focal Distance	60mm
FNO	2.8
Field Angle	25.3°
Frame Size	APS-C
Lens Structure	9 Blades, 7 Groups
Blade of diaphragm	14 Blades
Minimum Aperture	22
Closest Shooting Distance	18.5cm
Maximum Magnification	2.0 Folds
In-focus Drive Mode	MF
Filter Diameter	F 62mm
Lens Size (Length/Diameter)	About 95×70mm
Weight	About 503g
Mounts	Canon EF / Nikon F / Sony E / Sony A / Pentax K

The image shows the LOWE logo in a teal color. The letters are bold and stylized, with the 'O' being a solid circle.

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