



# Canon **FD** LENSES



INSTRUCTIONS

## Canon Interchangeable Lenses, FD Series

The Canon F-1 has adopted the full aperture metering system which boasts an accuracy equal to, if not better than, the stopped-down metering system employed in the Canon FT. It incorporates a transmitting mechanism for aperture signals in the lens and camera body. In order to expand the F-1 system, Canon's Optical Department, making full use of electronic computers, developed a series of high performance interchangeable lenses of the highest quality. The newly designed lenses boast high quality and preeminent performance. The FD series of lenses also include special lenses. In the

2 wide-angle lens series, lenses for every 10

degrees in angle of view were produced, while in the telephoto range, lenses for every 100mm in focal length were provided to greatly strengthen the photographic range. Besides these, aspherical lenses, fluorite lenses, and fish-eye lenses were developed. Furthermore, the use of multi-layer anti-reflection optical coatings and the adoption of Canon's unique focusing mechanism have contributed to the strengthening of the FD series. This new group of lenses can be used not only for the Canon F-1, EF, AE-1, AT-1, FTb and TX, but also for the Canon FT, Pellix and models with R lenses.

## FD Lens and Mount

The mount for FD lenses is that which was first marketed in 1959 for the Canonflex. Its easy-to-attach features, interchangeability with each lens, and its durability satisfy all requirements. Its features are as following:

### 1. Interchangeability

Not only the FD series of lenses but also the FL and R lens groups and all accessories can be used on this mount.

### 2. Speedy Changing

Changing time is much less than the screw-in or bayonet mount types. For example, this mount can be changed in one-third the time

required for changing a screw-in type mount. Changing operations are very easy even when interchanging large aperture or telephoto lenses.

### 3. Durability

Durability is guaranteed because of both the materials and design of the mount. Both the lens and camera mounts are made from hard-chrome plated brass giving them superior corrosion and abrasion resistant qualities. Also the breach lock surfaces join without turning against each other. This eliminates wear on the critical surfaces which determine the proper focus of the lens.

## Function of Lenses

**FD Lenses:** Full aperture metering. Coupled to automatic aperture.

**FL Lenses:** Stopped-down metering. Coupled to automatic aperture.

**R Lenses:** Stopped-down metering. Manually operated aperture.

- FD lenses are used on the Canon FT, Pellix and FX cameras for stopped-down metering coupled to automatic apertures, and used with manually operated apertures when attached to the R series of camera bodies.

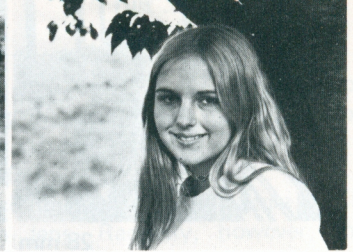




28 mm



50 mm



200 mm

## Effects of Interchanging Lenses

### 1. Change in Angle of View and Perspective

The photographic differences between the different kinds of lenses used is mostly due to the differences in focal lengths. Generally, this is understood as a change in the angle of view or difference in perspective. A narrow angle of view and a blurred background are

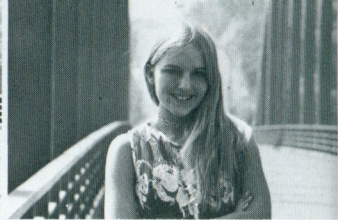
the common effects provided by a telephoto lens while a wide angle lens offers a wider angle of view and an exaggerated perspective. As long as the subject is the same distance from the lens, the perspective is the same for a wide angle and telephoto lens. When the distance between the subject and lens is changed, then the perspective will also change, if the same lens is being used.



28 mm



50 mm



200 mm

When another lens is mounted and the distance is changed to compensate for the change, the size of the subject in the photo remains constant, but the perspective of the background changes.

## 2. The Depth of the Field

The range of blurriness changes when the focal length of a lens changes. The focusing range becomes smaller as the focal length becomes longer. The focusing range also changes when the f/stop changes. Therefore, the various lenses should be used after understanding the characteristic of lenses such as the size of the subject, perspective, degree of blurring, and lens speed.

## Classification of Lenses

The angle of view of lenses changes according to the focal lengths. In the case of 35mm cameras, the standard focal length is set at 50mm. Lenses with a shorter focal length are called wide-angle and those with a focal length longer than 50mm are called telephoto.

### Wide-Angle Lenses

A wide angle of view is photographed when using this type of lens. Because lenses in this category have a deep depth of field, they are suited for taking snapshots, in taking photographs where there is no room to back up, for photographing large groups of people, and for taking pictures of buildings. A

wide-angle lens has the characteristic of exaggerating the perspective, but this can be used to advantage for taking pictures with a different effect.

The most commonly used wide-angle lens is the 35mm lens. Recently, however, the development of super-wide-angle lenses has become extensive, thereby rapidly expanding the range of photography.

(In the case of lenses for single-lens reflex cameras, the optical system is protruding forwards, when compared with the focal distance, because the optical back focus distance is long. For this reason, these lenses are called retrofocus lenses.)

## Standard Lenses

These lenses have a focal length of 50mm and have the widest applicable range. They are widely used not only for snapshots of scenery and people, but also to advantage in snapshots of night scenes due to their increasingly larger apertures. They are all-round lenses which also prove their high performance in close-up photography and copy work.

## Telephoto Lenses

Lenses in this category have narrow angles of view in contrast to wide-angle lenses, but they have the feature of clearly delineating distant scenes. Therefore, they are advantageous for photographing difficult-to-approach subjects, mountains, sporting events, and news events. Telephoto lenses are also widely used for portrait and com-

mercial photography because of their natural perspective. Generally, those lenses with focal lengths of 400mm or longer are called "super-telephoto".

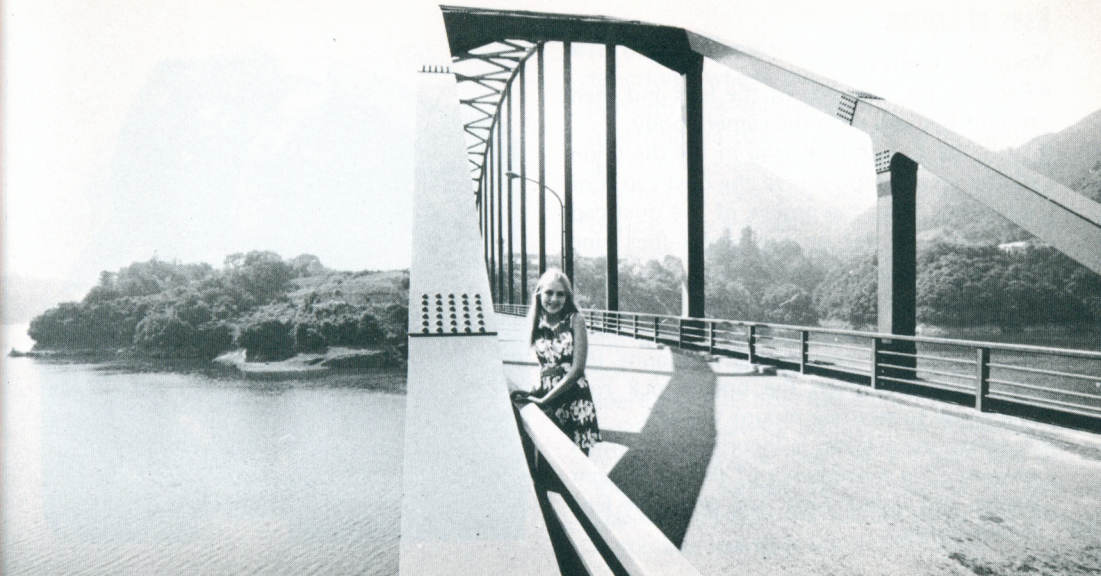
■ "Telephoto lens" is the name for those type of lenses, among long focal point lenses, in which the length of the lens is shorter than the focal length. Generally, however, no distinction is made.

## Zoom Lenses

Zoom lenses are very convenient because a single zoom lens can be used instead of many interchangeable lenses by just changing its focal length.

## Special Lenses

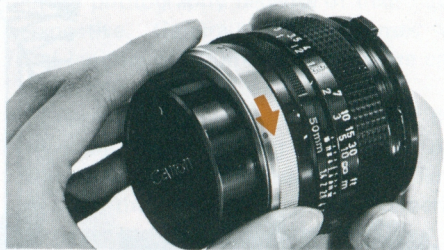
Fish-eye lens, tilt-and-shift lens and macro lens which are used for special kinds of photography are included in this category.

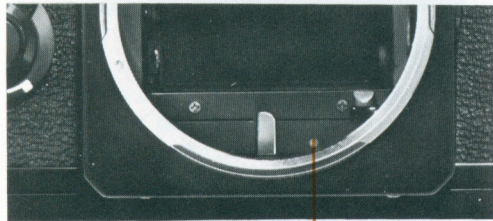
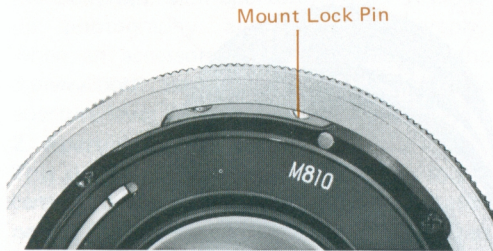


# Uses of Lenses

## Mounting Lenses

- Remove the dust cap of the lens and then mount the lens onto the camera body.
- Turn the breech-lock ring in the direction of the arrow and remove the dust cap. For attaching, align the groove of the dust cap with the red dot on the breech-lock ring and then tighten the breech-lock ring.
- Align the red dot on the breech-lock ring with the red dot on the lens attachment section of the camera body, mount the lens, and then turn the breech-lock ring clockwise to securely mount the lens.
- A safety mechanism is incorporated which prevents the movements of the diaphragm blades and breech-lock ring when the lens is dismounted.





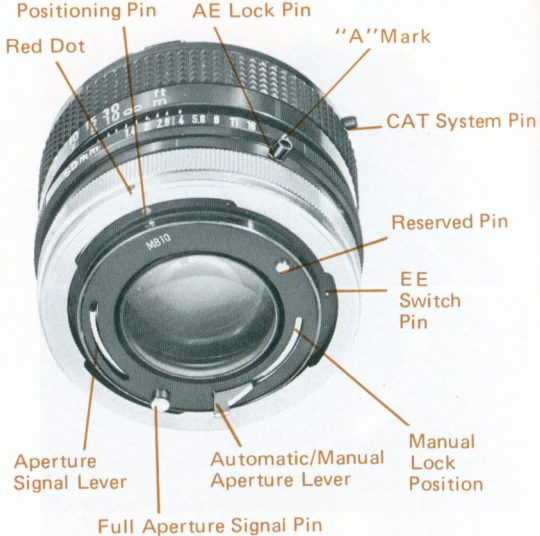
- In order to make the various mechanisms function, when the lens is dismantled, perform the following. Turn the breech-lock ring, so that it is in the same position as when the lens is mounted, while pressing the mount lock pin with a small pointed object, like a pencil. The mount lock pin is situated below the breech-lock ring.
- Be sure to unlock the stopped-down functioning lever lock of the camera body. If the lever is pressed or is locked, the red dot, which indicates that the automatic aperture will not function, can be seen inside the camera mount. The automatic/manual aperture lever, at the back end of the lens, cannot be connected to the coupling part on the camera body and the automatic aperture will not function.

# Lens Signal Levers and Pins

## 1. Automatic/Manual Aperture Lever

This lever stops down the aperture to the preset position, and is of the same construction as that for the FL lenses. On all cameras after the Canon FX model, a fully automatic aperture is performed with power drive from the camera. This lever is clamped when turned counterclockwise; can be attached to R series cameras and used with manually operated apertures.

**Note:** A manually operated aperture is not necessary in the case of FT and Pellix cameras because stopped-down photography can be performed with the metering lever. However, in the case of FX and R cameras, a



manually operated aperture is used in close-up photography and macrophotography when an accessory is used in between the camera body and the lens and the automatic aperture lever is no longer coupled.

## **2. Aperture Signal Lever**

This signal transmits the preset f/stop to the camera body. Power drive for the match needle for full aperture metering is operated by turning the preset aperture ring. It performs 1 to 1 movement with the preset aperture ring. On the other hand, when performing Servo EE photography, the preset aperture position is determined by the power drive on the Servo EE Finder.

## **3. Full Aperture Signal Pin**

This signal transmits the effect of the fully opened lens to the meter. This pin auto-

matically compensates errors at full aperture metering, when full aperture f/stop is changed by interchange of lenses.

## **4. AE Lock Pin**

A safety lock pin to prevent accidental movement over to the "A" mark. When setting to the "A" mark, turn the aperture ring while pressing the EE Lock Pin.

## **5. AE Switch Pin**

This pin emits a signal when the aperture ring is set at the "A" mark for EE use. When the lens aperture is set at the "A" mark, the lens can only be used with a F-1, EF or AE-1 camera.

## **6. Spare Signal Pin**

Reserved pin for developing System Accessories.

# Aperture Operations

## Automatic Aperture

In the case of FD lenses, the field of the view through the viewfinder can always be observed at full aperture opening, even after the aperture ring has been set at the desired f/stop. The aperture is stopped down to the f/stop selected by the aperture ring only for an instant when the shutter is released. Immediately after the shutter has been released, the aperture again returns to full opening and a bright field-of-view.

## Manually Operated Aperture

The manually operated aperture is used for observing what the focusing condition are actually like when the aperture is stopped down, and for special photography such as close-ups and macrophotography.

When the lens is mounted on an F-1, EF, AE-1, AT-1, FTb, TX or FT, the diaphragm blades can be opened or closed by turning the aperture ring, after the stopped-down metering lever on the front side of the camera body is set and locked.

- When an accessory, such as an M tube with no aperture coupling pin, is to be inserted in between the lens and camera body, it can be set at a manually operated aperture in the following manner. Before attaching the accessory, turn the automatic aperture lever to manual lock position and then attach the accessory onto the bayonet ring. For releasing the lock, push the automatic aperture lever to its former position.



■ The manual aperture operations for the FD lens which has a manual lock lever are different from those for other FD lenses. Move the aperture lever to the manual lock position and slide the manual lock lever to the "L" position. If mounted onto the camera in this condition, the lens aperture can be operated manually. This lens cannot be used on the Canonflex R series of cameras.

### Attaching Onto Macrophoto Coupler

When attaching a lens in the reverse position onto a macrophoto coupler and for obtaining a manually operated aperture condition, perform the following. First, move the automatic aperture lever over to the manual lock. Next, attach the Macrohood of the coupler 15 and then turn the bayonet ring all the way.

## Lens Aperture

Set the necessary f/stop at the index mark by turning the aperture ring.

The aperture becomes smaller as its f/stop number gets larger. With each graduation increase, the amount of exposure decreases by one-half. When the aperture is stopped down by one graduation, the exposure time must be extended by two times. And when the aperture is stopped down by two graduations, the exposure time must be extended by four times. Intermediate positions between graduations on the aperture scale

can be used. FD lenses have click stops at intermediate positions between graduations on the aperture ring scale to facilitate operations. Some lenses have no relation to the one-half decrease in exposure volume between the maximum f/stop and the next f/stop. The ratio between the f/stops and amount of exposure, with f/2 as the standard, are as follows:

f/stops	1.2	1.4	1.8	2	2.5	2.8	3.5	4	5.6	8	11	16	22
exposure ratio:	3	2	1.25	1		1/2	1/3	1/4	1/8	1/16	1/32	1/64	1/128



Front Bayonet for Cap  
and Hood

CAT System Pin

Focusing Ring

Distance Scale

Focusing Index Mark  
with Depth-of-Field Scale

Aperture Ring

"A" Mark for AE Photography

Canon Breech-Lock  
Mount Ring

## Distance Scale

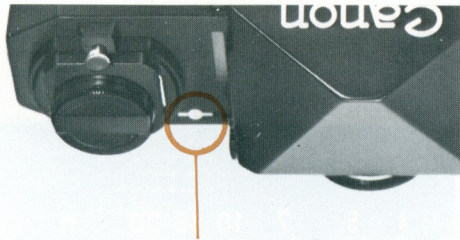
The distance scale indicates the focused distance between the subject and the film plane. The scale is necessary for checking the depth of the field, for flash and infrared photographs.

- The correct position of the scale is in the center of each value. For example, the correct position of a two-digit value is the center of the two figures.

## Infrared Index Mark

For infrared photography, correction of the distance scale is necessary because the focal point slightly deviates from ordinary photography. Focus first in the ordinary manner, then adjust that focused distance to the red





Film Plane Indicator

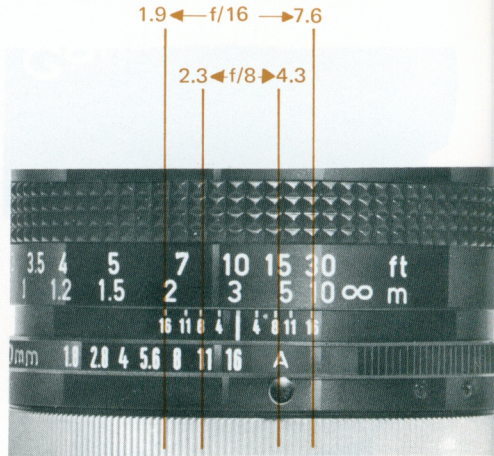
infrared index mark. For instance, if the distance scale reads 10m after focusing, merely shift the 10 scale to the “.” position. The position of the “.” on the FD lens is based on using film with the highest wavelength sensitivity figure of 800nm, such as Kodak IR 135 film with a Wratten 87 filter.

### Film Plane Indicator

In case the focusing is done by actual measurement, measure the distance from the film plane indicator and interpret the measured distance on the distance scale.

## Depth-of-Field Scale

The depth-of-field scale indicates the range of subjects which will be in focus sharply on the film. This range will vary with the following factors: The depth of the field will be deeper the smaller the f/stop, the further the distance of the subject, and/or the shorter the lens focal length. The depth of the field will be shallower the larger the f/stop, the nearer the distance of the subject, and/or the longer the lens focal length. For example, if the lens used is 50mm and the subject has been focused at a distance of 3m (10'), with an f/8 value read off from both indexes on either side of the focusing index mark, the depth of the field is from approximately 2.3m (8') to 4.3m (14').



**50mm Lens f/8**

Depth of the field 2.3-4.3m (8'-14')

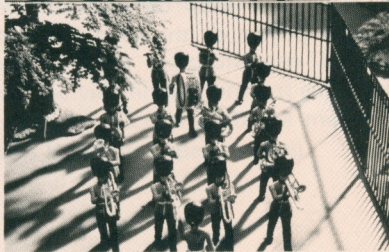
Focused at 3m (10')



**50mm Lens f/16**

Depth of the field 1.9-7.6m (6'-25')

Focused at 3m (10')



If the aperture is closed down to f/16, the picture will become sharp between 1.9m (6') to 7.6m (25') from the camera. This range will vary with the f/stop selected.

- In the case of Canon FD lenses, you can see the actual sharpness through the viewfinder by pressing the multi-purpose lever.
- Although air bubbles may sometimes be seen in a lens, they do not affect the resolution power or the sharpness of the picture.

## **FD Lens Mount (FL and R Series Lenses)**

All Canon FD and FL lenses which have the FD and FL mounts can be used with the TTL cameras, except the FLP 38mm f/2.8.

- It is also possible to attach and use all the R lenses for Canonflex use. However, as the preset aperture mechanism differs, pictures must be taken by controlling the aperture manually.
- Attach the lens quickly in the shade. The film will sometimes become fogged if the lens is left unattached.
- Whenever a lens is removed, be sure to put on the dust cap to protect the various signal levers and pins.
- When not in use for a long time, protect the mirror with a flange cap.



CAT System Pin



## CAT System Pin

The CAT System Pin is for automatic flash when using the Canon Speedlite 133D. It is built into the four Canon FD lenses: 50mm f/1.4 S.S.C., FD 50mm f/1.8 S.C., FD 35mm f/2 S.S.C. and FD 35mm f/3.5 S.C. When the Flash-Auto Ring is attached, it transmits the revolving degree of the focusing ring, in other words, the focused distance to the meter.

Therefore, the exposure can be decided inside the viewfinder, without guide number calculations, according to the match-needle system by turning aperture ring.

## Canon FD Lenses



## Special Lenses



**Canon Lens Fish-Eye 7.5mm  
f/5.6 S.S.C.**



**Canon Lens Fish-Eye FD 15mm  
f/2.8 S.S.C.**



**Canon Lens TS 35mm  
f/2.8 S.S.C.**

This special type of lens covers an angle-of-view of  $180^\circ$  and takes pictures in the size of a 23mm diameter circle. It is not necessary to fix the mirror upward because this lens is of the retrofocus type. The unique images formed with this fisheye lens can be seen directly through the viewfinder when shooting.

This is a fish-eye lens for ordinary photography. It covers an angle-of-view of  $180^\circ$ . Its lens speed of f/2.8 ranks among the fastest. This lens can be used without fixing the mirror upward because it is the retrofocus type. It can be used in the same manner as other ordinary FD lenses when metering and shooting. Sharp images can be obtained because this lens is treated with multi-layer coating.

It is indispensable for shooting distortion-free architectural photographs. Tilting and shifting can be performed individually or in combination. Shooting range and the depth of the field can be controlled. Diffused reflection has been eliminated with Canon's multi-layer coating treatment technique. At the same time, Canon's Floating System was adopted to prevent image degradation in close-up photography.

## Super Wide-Angle Lenses



**Canon Lens FD 17mm  
f/4 S.S.C.**



**Canon Lens FD 20mm  
f/2.8 S.S.C.**



**Canon Lens FD 24mm  
f/2.8 S.S.C.**

Among the interchangeable lenses with short focal distances, this lens boasts perfect elimination of distortion. Instead of conventional retrofocus type lenses, this lens prevents aberration breakdowns between infinity and close distances because of changing its air distance of the lens system.

Despite its short focal length of 20mm, this super-wide-angle lens has the world's fastest lens speed of f/2.8. Canon's original and unique aberration compensation mechanism (Canon Floating System) was adopted in this lens in order to obtain sharp images throughout the entire close-up to infinity range.

This retrofocus type lens is noted for having a very fast lens speed for a super-wide-angle lens. It is combined with the full range aberration free system and it takes pride in its high contrast and high resolving power qualities even at the full aperture opening.



**Canon Lens FD 24mm  
f/1.4 S.S.C. ASPHERICAL**

This is the world's fastest 24mm lens for a 35mm camera. By using Canon's technological breakthrough—mass produced aspherical surfaces—it assures maximum resolution and contrast through optimum correction of all aberrations and through the use of floating elements, assures constant aberration correction throughout the focusing range from infinity to a close 30cm.

## Wide-Angle Lenses



**Canon Lens FD 28mm  
f/2.8 S.C.**

This is a reasonable priced wide-angle lens with considerable depth of the field, making it perfect for candid photography. It has very high resolving power, contrast and brightness, and is compact and lightweight for easy handling. Good enlargements can be made even at high magnifications. Spectra Coating assures excellent color performance.



**Canon Lens FD 28mm  
f/2 S.S.C.**

This lens has the world's fastest aperture of f/2 among the 28mm lenses. With the Canon Floating System, which prevents aberration in shots at a close distance, and the Super Spectra Coating, which eliminates ghosts and flares, the FD 28mm f/2 S.S.C. lens offers a high contrast and sharp picture image even with full aperture opening.



**Canon Lens FD 35mm  
f/3.5 S.C.**

Compact, lightweight and highly efficient; designed specially for taking snapshots. Its performance is indisputable and the elimination of the various aberrations is complete. It has high contrast and high resolving power. Even at full-aperture opening, it takes sharp images throughout the entire picture. Equipped with a coupling pin to Canon Auto Tuning (CAT) System.



**Canon Lens FD 35mm  
f/2 S.S.C.**

As a wide-angle lens, it shows its superior efficiency when it is used for picture taking at full-aperture openings. Special emphasis is put into it so that it can be also used as a standard lens. It incorporates the full range of the aberration-free system to assure high resolving power at a photographic distance of 30 centimeters. Equipped with a coupling pin to the CAT System.

## Standard Lenses



**Canon Lens FD 50mm  
f/1.8 S.C.**

One outstanding feature of this lens is its superior angle-of-view characteristics from the middle to the outer edges and excellent effects. This standard lens has good delineation power even during close-up photography. Equipped with a coupling pin to CAT System.



**Canon Lens FD 50mm  
f/1.4 S.S.C.**

The optical system of the reputed FL 50mm f/1.4 standard lens is put into effective use in this lens. Its high resolving power and high contrast delineation power are magnificent. Equipped with a coupling pin to the CAT System.



**Canon Lens FD 55mm  
f/1.2 S.S.C.**

It tops all the FD series of lenses for having the fastest lens speed. It is similar to but more advanced than the FD 50mm f/1.4 and despite its large aperture, it is highly regarded for its high contrast during full-aperture opening and for high resolving power.



**Canon Lens FD 55mm  
f/1.2 S.S.C. ASPHERICAL**

Despite its large f/1.2 aperture, spherical aberration and coma have been completely eliminated from this lens and flare has been held to a minimum. This lens provides superb image delineation power even at full aperture openings during night photography. This lens incorporates Canon's Floating System which performs aberration compensation during close-up photography.

## Macro Lenses



**Canon Lens FD 50mm  
f/3.5 S.S.C.**



**Canon Lens  
FD 100mm f/4 S.C.**

Emphasis was laid on the resolving power of this lens at very close shooting distances. Close-up photography of up to 1 : 2 is possible without any accessories. 1 : 1 size photography is possible with the use of the Extension Tube FD 25. The exposure is automatically corrected. This lens is indispensable for close-up photography and copy work.

A new lens which can be adjusted for very close macro work or telephoto macrophotography. It can be focused for 45cm, an even closer 40cm with a Canon Extension Tube FD 50, or up to as far as infinity. With its high resolving power, and 1:1 to 1:2 magnification, this lens offers a great range of use.

## Telephoto Lenses



**Canon Lens FD 85mm  
f/1.8 S.S.C.**

Since 85mm lens photographs perspective naturally, it is used in taking portraits and for many other applications. This lens is a thorough improvement over the FL 85mm. Astigmatism and chromatic aberration are perfectly corrected to produce excellent picture quality. It eliminates ghost and flare caused by surface reflection. The FD 85mm is only 57mm long, making it a very handy compact lens.



**Canon Lens FD 85mm  
f/1.2 S.S.C. ASPHERICAL**

This is the fastest 85mm lens on the market. It was especially designed to be an aspherical lens to eliminate flare, and provide resolution and high contrast. An aberration compensation mechanism is also incorporated in this mechanism to further enhance this short telephoto lens's quality.



**Canon Lens FD 100mm  
f/2.8 S.S.C.**

This telephoto lens is ideal for near natural snapshots and portrait photography. It is a fast speed lens which acquired the high performance of the FL 100mm f/3.5, regarded as the sharpest of all Canon telephoto lenses. Its telephoto ratio is very small and has an overall length of 57mm but high contrast and image-forming qualities are superb.



**Canon Lens FD 135mm  
f/3.5 S.C.**

4 elements in 4 groups. This is a high performance, small size, lightweight 135mm popular type lens. It is designed for taking sports pictures, portraits and mountain scenes.



**Canon Lens FD 135mm  
f/2.5 S.C.**



**Canon Lens FD 200mm  
f/4 S.S.C.**



**Canon Lens FD 200mm  
f/2.8 S.S.C.**

Its usefulness is wide and perfect for portrait and commercial photography. This lens came out of the Canon factory as a result of improving the optical system of the FL 135mm f/2.5 lens. It has the fastest lens speed of the FD telephoto lenses.

This lens is an improved version of the conventional FL 200mm f/3.5 lens and one factor that makes it stand out is its length, measuring only 13.3cm. Its high contrast and high resolving power are excellent. It's good for sports and news photography, portrait and snapshot photography and taking pictures of animal life.

This compact, lightweight lens is designed especially for shooting news, sporting events and stage productions. It's high resolving power gives edge to edge sharpness and good definition over its entire focusing range. The closest focusing distance of 1.8m insures filling the frame with the subject. It is the ideal hand size 200mm lens with the added brightness of f/2.8.



**Canon Lens FD 300mm  
f/5.6 S.S.C.**



**Canon Lens FD 300mm  
f/2.8 S.S.C. FLUORITE**



**Canon Lens 400mm  
f/4.5 S.S.C**

## Super Telephoto Lenses

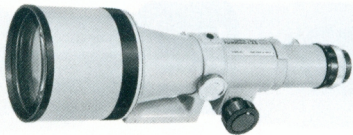
This lens is designed to be as compact and lightweight as possible without reducing its performance.

Because it employing the rear-focusing system, focusing handling is very easy with the unchangeable overall length of the lens. Super Spectra Coating prevents flare or ghost images.

An artificial fluorite lens which has been designed as an FD lens for more efficient operation effected by its reduced diameter. TTL metering is performed with the lens at maximum aperture. If used with the Extender 2X, the two can function as a 600mm f/5.6 lens which has high quality results.

Employing the latest technical breakthrough, a rear group focusing unit, this lens is the fastest 400mm super telephoto lens in the world. It also produces the best image delineation possible. Further, all this is built into a lightweight and compact design for your convenience.

## New Products



**Canon Lens FD 600mm  
f/4.5 S.S.C.**



**Canon Lens FD 800mm  
f/5.6 S.S.C.**

These super-telephoto lenses offer the most compact and lightweight design, the brightest aperture in their class, as well as excellent focusing potential. Because the rear-focusing mechanism is employed as in the FD 400mm f/4.5 lens, even when focusing, the overall length of the lenses does not change. You will find that the operation of these lenses is easy and exceptionally good.

## Zoom Lenses

### New Product



**Canon Zoom Lens  
FD 28 – 50mm  
f/3.5 S.S.C.**

This lens is the 1.78X short zoom lens offering the wide angle function. The new system which uses two groups in the zoom lends this lens an exceptional focusing potential and provides a photographic potential equivalent to that of lenses other than zoom lenses.

Also the macro mechanism is built-in for magnifying the photographic range, and it offers the closest distance of up to 25cm from the subject.



**Canon Zoom Lens  
FD 35 – 70mm  
f/2.8 – 3.5 S.S.C.**

This is a wide angle lens with high resolving power with a mechanism for macrophotography.

The FD 35–70mm's system is divided into front and rear components, making it a new type of zoom lens. This design perfectly corrects distortion, coma and other aberrations. It has multi-layer coating. The resolving power of this lens is as good as that of a single lens.

### New Product



**Canon Zoom Lens  
FD 80 – 200mm  
f/4 S.S.C.**

The brightest and most compact in size of this class of telephoto zoom lenses, this lens has more potential uses than any of the others. All of the aberration is eliminated by the unique zooming system.

Furthermore, due to the closest photographic distance of 1 meter, the capacity of telephoto lenses is increased.



**Canon Zoom Lens  
FD 100 – 200mm  
f/5.6 S.C.**



**Canon Zoom Lens  
FD 85 – 300mm  
f/4.5 S.S.C.**

Small in size and lightweight, this is a universal zoom lens for shooting scenery and snapshots. Distortions and aberrations are held to the very minimum. Its efficiency, together with fully automatic aperture and fast picture taking functions, lives up to the expectations of everyone.

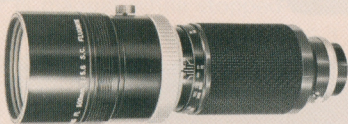
The new FD 85–300mm lens is a compact zoom lens, very useful when the utmost mobility is required.

Chromatic aberration and distortion are completely eliminated. Multi-layer coating does away with flare and improves color balance. Very sharp resolving power is possible at all focal lengths. Moreover, this 11-component/15-element lens permits handheld shots.

## FL Fluorite Lenses



**Canon Lens FL 300mm f/5.6 FLUORITE**



**Canon Lens FL 500mm f/5.6 FLUORITE**

The optical systems of these two lenses, the FL 300mm f/5.6 FLUORITE, and the FL 500mm f/5.6 FLUORITE lenses include artificial fluorite single crystals, a lens material which completely eliminates secondary spectrum. Consequently they assure a high resolving power and excellent contrast. Additionally, the telephoto ratio of these lenses was markedly reduced, to increase their portability and ease of operation.

## Super Telephoto Lenses

Canon Lens FL 600mm f/5.6



Canon Lens FL 400mm f/5.6



Canon Lens FL 800mm f/8



Canon Focusing Unit



Canon Lens FL 1200mm f/11 S.S.C.

## NOTES

1. Wide angle lenses wider than 28mm are designed for use with only one filter. Do not use two filters together or an eclipse effect will result.
2. 7.5mm f/5.6 S.S.C.: Six filters are built-in. To switch the filters, while pressing the lock pin, which is next to the bayonet ring, turn the filter adjustment ring on the other side of the pin. Aperture operation is manual while stopped-down metering is down with the F-1, EF, AE-1, AT-1, FTb and TX cameras.  
Exposure factors of the built-in filters; SKY (1X), Y3 (2X), O (3X), R (6X), CCA4 (1.5X), CCB4 (1.5X)
3. FD 15mm f/2.8 S.S.C.: Four filters are built-in. Push the filter set ring in the direction of the bayonet ring and align

the filter-type index and the white dot. The exposure factors of the filters are the same as those of the 7.5mm fish-eye lens.

4. FD 300mm f/5.6 S.C.: For your convenience, a tripod attachment holder and a lens hood are built-in. In order to compensate for the movement of the focal point due to temperature changes, allowance was made in the length of the protrusion so that corrections down to  $-30^{\circ}\text{C}$  could be made.

# Table of Interchangeable Lenses for Canon SLR Cameras

## FD Series (For AE Operation)

Type	Lens	Angle of View	Minimum Aperture	Closest Focusing Distance		Filter Size (mm)	Hood	Length		Weight		
				(m)	(ft.)			(mm)	(in.)	(g)	(lbs.)	(ozs.)
Full-Frame Fish-Eye	Fish-Eye FD 15mm f/2.8 S.S.C.	180°	f/16	.3	1	Built-in	Built-in	60.5	2-3/8	485	1	1
Super Wide-Angle	FD 17mm f/4 S.S.C.	104°	f/22	.25	.9	72	—	56	2-3/16	450	1	
	FD 20mm f/2.8 S.S.C.	94°	f/22	.25	.9	72	—	58	2-5/16	345		12
	FD 24mm f/1.4 S.S.C. ASPHERICAL	84°	f/16	.3	1	72	—	68	2-11/16	500	1	2
	FD 24mm f/2.8 S.S.C.	84°	f/16	.3	1	55	+BW-55B	52.5	2-1/16	330		12
Wide-Angle	FD 28mm f/2 S.S.C.	75°	f/22	.3	1	55	+BW-55B	61	2-3/8	343		12
	FD 28mm f/2.8 S.C.	75°	f/22	.3	1	55	+BW-55B	49	1-15/16	230		8
	*FD 35mm f/2 S.S.C.	63°	f/22	.3	1	55	+BW-55A	60	2-3/8	345		12
	*FD 35mm f/3.5 S.C.	63°	f/22	.4	1.5	55	+BW-55A	46.8	1-13/16	205		7
Standard	*FD 50mm f/1.4 S.S.C.	46°	f/16	.45	1.5	55	+BS-55	49	1-15/16	305		11
	*FD 50mm f/1.8 S.C.	46°	f/16	.6	2	55	+BS-55	38.5	1-1/2	200		7
	FD 55mm f/1.2 S.S.C.	43°	f/16	.6	2	58	+BS-58	52.5	2-1/16	510	1	2
	FD 55mm f/1.2 S.S.C. ASPHERICAL	43°	f/16	.6	2	58	+BS-58	55	2-3/16	575	1	4
Macro	FD 50mm f/3.5 S.S.C. Macro with Extension Tube FD 25	46°	f/22	20.5 (cm)	8.1 (in.)	55	None Necessary	59.5	2-5/16	310		11
	FD 100mm f/4 S.C. Macro with Extension Tube FD 50	24°	f/32	.4	1.31	55	None Necessary	112	4-7/16	530	1	3
Short Telephoto	FD 85mm f/1.2 S.S.C. ASPHERICAL	28°30'	f/16	1	3.5	72	—	71	2-13/16	756	1	11
	FD 85mm f/1.8 S.S.C.	28°30'	f/16	.9	3	55	+BT-55	57	2-1/4	425		15
	FD 100mm f/2.8 S.S.C.	24°	f/22	1	3.5	55	+BT-55	57	2-1/4	360		13 2

Type	Lens	Angle of View	Minimum Aperture	Closest Focusing Distance		Filter Size (mm)	Hood	Length		Weight (g)	Weight (lbs.) (ozs.)	
				(m)	(ft.)			(mm)	(in.)			
Telephoto	FD 135mm f/2.5 S.C.	18°	f/22	1.5	5	58	Built-in	91	3-9/16	630	1	6
	FD 135mm f/3.5 S.C.	18°	f/22	1.5	5	55	+BT-55	85	3-3/8	385		14
	FD 200mm f/2.8 S.S.C.	12°	f/22	1.8	6	72	Built-in	140.5	5-9/16	700	1	9
	FD 200mm f/4 S.S.C.	12°	f/22	2.5	8	55	Built-in	133	5-1/4	675	1	8
	FD 300mm f/2.8 S.S.C. FLUORITE with Extender 2X	8°15'	f/22	3.5	12	Exclusive Insertion Type	Built-in	230	9-1/16	1900	4	3
	FD 300mm f/5.6 S.S.C.	8°15'	f/22	3	10	55	Built-in	198.3	7-13/16	685	1	8
Super telephoto	FD 400mm f/4.5 S.S.C.	6°10'	f/22	4	13	Exclusive Insertion Type	Built-in	282	11-1/8	1300	2	14
	FD 600mm f/4.5 S.S.C.	4°10'	f/22	8	27	48	Built-in	455	1'5-15/16	4300	9	8
	FD 800mm f/5.6 S.S.C.	3°06'	f/22	14	45	48	Built-in	567	1'10-5/16	4300	9	8
Zoom	FD 28-50mm f/3.5 S.S.C.	75°-46°	f/22	+++1	3.5	58	+W-69 B	99.5	3-15/16	490	1	1
	FD 35-70mm f/2.8-3.5 S.S.C.	63°-34°	f/22	+++1	3.5	58	+W-69	120	4-3/4	575	1	4
	FD 80-200mm f/4 S.S.C.	30°-12°	f/32	1	3.5	55	Built-in	161	6-5/16	750	1	10
	FD 100-200mm f/5.6 S.C.	24°-12°	f/22	2.5	8	55	Built-in	173	6-13/16	765	1	11
	FD 85-300mm f/4.5 S.S.C.	28°30'-8°15'	f/22	2.5	8	Series IX	Built-in	243.5	9-9/16	1695	3	12

## FL and Manual Series (For Stopped-Down Metering)

Type	Lens	Angle of View	Minimum Aperture	Closest Focusing Distance		Filter Size (mm)	Hood	Length		Weight		
				(m)	(ft.)			(mm)	(in.)	(g)	(lbs.)	(ozs.)
Circular Fish-Eye	Fish-Eye 7.5mm f/5.6 S.S.C.	180°	f/22	Fixed Focus		Built-in	—	62	2-7/16	380		13
Tilt and Shift	TS 35mm f/2.8 S.S.C.	63°/79°	f/22	.3	1	58	+BW-58B	74.5	2-15/16	545	1	3
Super Telephoto	**FL 400mm f/5.6	6°10'	f/32	4.5	15	++48	Exclusive	338	1'1-5/16	3,890	8	9
	**FL 600mm f/5.6	4°10'	f/32	10	35	++48	Built-in	448	1'5-5/8	5,000	11	
	**FL 800mm f/8	3°06'	f/32	18	60	++48	Built-in	508	1'8	5,360	11	13
	**FL 1200mm f/11 S.S.C.	2°05'	f/64	40	130	++48	Built-in	853	2'9-9/16	6,200	13	11
Artificial Fluorite Telephoto	FL 300mm f/5.6 FLUORITE	8°15'	f/22	4	13	58	Built-in	168	6-5/8	850	1	14
	FL 500mm f/5.6 FLUORITE	5°	f/22	10	33	95	Built-in	300	11-13/16	2,700	5	15

- \* Equipped with a coupling pin for Canon Automatic Tuning System.  
 \*\* Front component interchangeable type. Focusing adapter (2 elements, 1 group, FL automatic diaphragm, with A-M ring).

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FD lens hoods are of bayonet mount.  
 Filter is of insertion type with holder.  
 Macro focusing capability.

Subject to change without notice.



## Accessories

### ■ Canon Bellows FL

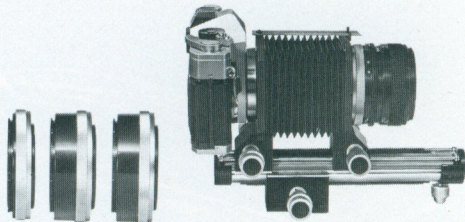
A high grade bellows with a semi automatic aperture coupling mechanism. It is used for macrophotography, from life-size to 3X magnification, with the use of a standard lens. A slide duplicating apparatus can be attached to this bellows.

### ■ Canon Extension Tubes M

Canon Extension Tubes M make possible easy close-up photography. Manually operated.

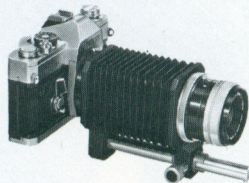
### ■ Canon Bellows M

A handy bellows for macrophotography. This is used by attaching a macro lens, such as FL 50mm f/3.5, FLM 100mm f/4, FD 50mm f/3.5 S.S.C. or FD 100mm f/4 S.C.



Canon Extension Tubes M

Canon Bellows FL



Canon Bellows M

### ■ Canon Camera Holder F3

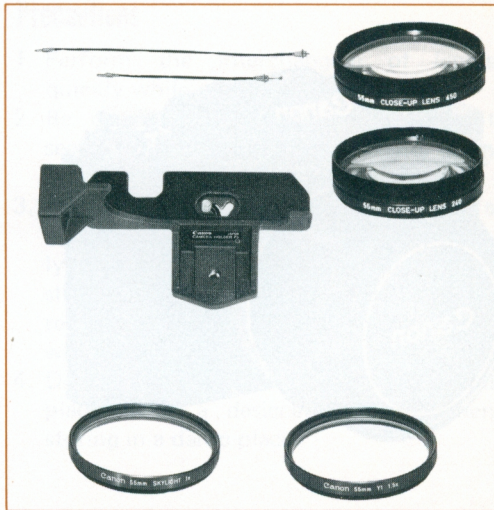
The use of the Camera Holder F3 is recommended for telephotography and slow speed photography. It holds the camera in a stable, center of gravity position, and changing the camera to a horizontal or vertical position can be easily performed. The use of a cable release, at this time, is effective.

### ■ Canon Release 30, 50

Canon releases of two different lengths are available.

### ■ Close-Up Lenses (Screw-in Type 48mm, 55mm and 58mm)

Screw diameters for all lenses are available. Classified into two kinds of 450 and 240 according to close-up distance.





### ■ Lens Hood

Always use a lens hood when photographing. It is especially effective when photographing against the light.

With the exception of built-in hoods, all hoods are of the bayonet type. They are attached to the front of the lens by turning clockwise. They can also be stored on the lens in reverse position by turning counter-clockwise.

### ■ Lens Cap

Except for exclusive caps, all caps are of the clip-on type. They are attached to the inner threads of the lens by depressing the knobs on both sides. They can also be attached to double-screw filters.



## Precautions

1. Perform the interchanging of lenses quickly while avoiding direct sunlight.
2. Be careful not to damage the mount sections, and keep them covered when not in use.
3. Remove dust from the lens surface with a clean, soft brush. Remove stains by lightly wiping with a clean cotton cloth slightly soaked in alcohol. Scratches will result if the lens is wiped with pressure or when dust is still on the lens.
4. Do not keep the lenses in hot or humid places. Use a desiccating agent when storing in a damp place.

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