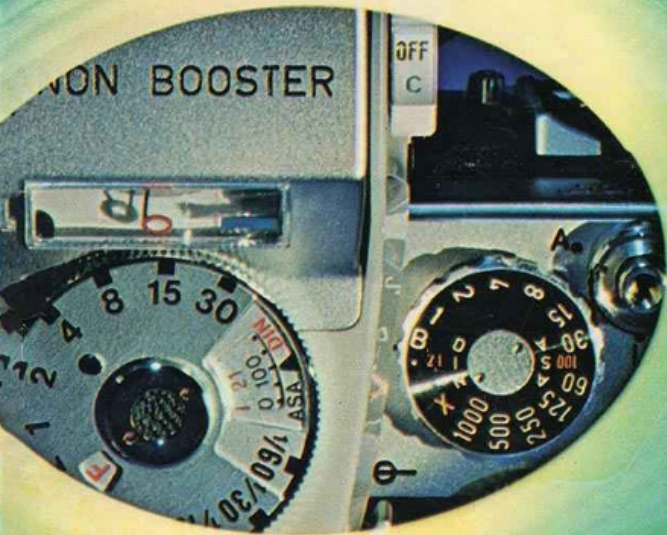


**Canon**

**Broaden Your Photographic Range  
with Canon SLR Camera System**



**Interchangeable Lenses & Accessories**

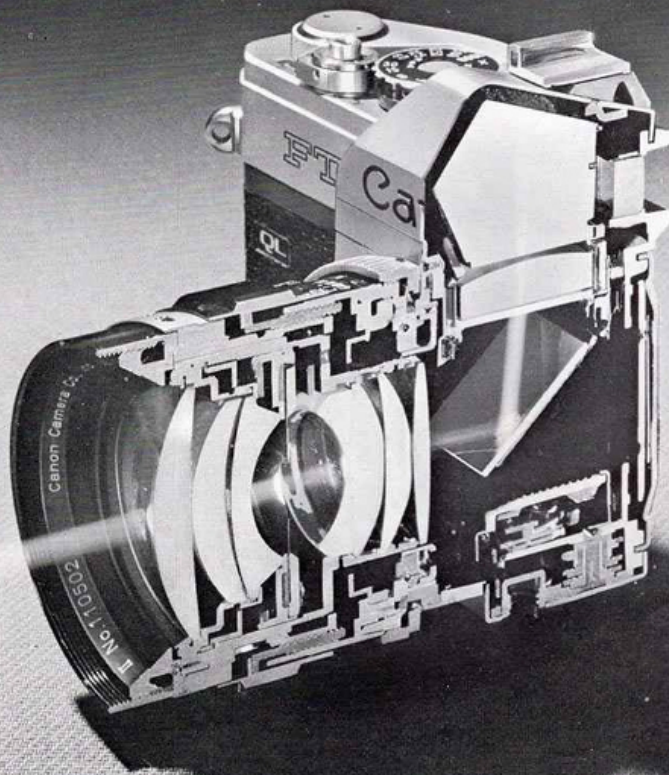
# Canon Single-Lens Reflex Cameras and System

It seems like only yesterday that the world's progressive photographers took extraordinary pictures with the exhaustive use of only one lens, making the most of their experience and imagination. And it was only recently that the unusual worlds of extra-long-telephoto and super-wide-angle photography were also opened up.

The Single-Lens Reflex cameras have become very popular with their numerous interchangeable lenses from which you can choose any type of lens to fulfill any photographic need. Unlike the rangefinder type camera, you can shoot exactly what you see through the viewfinder. We are now in the age where anyone can shoot professional-type pictures with the greatest of ease.

Canon's quality SLR cameras which boast the highest performance are the best suited cameras for the present age. More than 20 interchangeable lenses and over 200 accessories are available for these SLR cameras. The entire group of SLR cameras, interchangeable lenses and accessories have been systematically designed to meet all photographic needs from snap shots to photography in scientific work.

This brochure has been made for the benefit of Canon SLR camera users and contains explanations on all interchangeable lenses and accessories for Canon SLR cameras.



# Canon's High Performance SLR Cameras

Canon gives its wide range of camera users, from the beginner to the highly professional photographer, a varied selection of quality cameras. From among these many cameras we would like to introduce our latest models of the SLR cameras.

Canon Pellix QL is the only TTL exposure system SLR camera in



the world to employ the through-the-lens-and-mirror (TTL) system, a recent Canon innovation. Light from the subject passes directly through the taking lens and thence through a very thin, fixed pellicle mirror into the CdS meter where it is measured. Because the meter is directly level with the film plane the reading thus taken is absolutely correct. And, as the pellicle mirror is also a "beam-splitter", part of the light is reflected up into the viewfinder. Thanks to the fixed pellicle mirror, there is no "blackout". The Pellix QL is known as the "blinkless" SLR camera. With the attachment of the Canon Booster, an auxiliary meter for extremely dim lighting, ultra-low illumination down to EV -4.5 can be accurately read.

Canon FT QL incorporates the most advanced TTL exposure system with a quick-return mirror. The light from the image passes through the taking lens and is reflected by the mirror to the viewfinder. But a portion of the light is deflected into the CdS meter by means

of a "beam-splitter" half mirror located in the condenser lens. Thus, the measurement of light through the lens in this manner ensures particularly fine results. Combined with the Canon Booster, measuring of dim light down to EV -3.5 is possible.

Canon Pellix QL and FT QL include a revolutionary new prism screen rangefinder and the Canon-developed Quick Loading (QL) mechanism.

## Canon Pellix QL

**Viewfinder:** Eye-level system using pentagonal prism.

**Focusing Glass:** Using Fresnel lens and prism screen rangefinder.

**Mirror:** The half transparent Canon Pellicle Mirror.

**Aperture:** Fully automatic pre-set aperture built in. Pre-set release possible.

**Shutter:** 1/1000-1 sec. and B (T) X focal plane shutter.

**Exposure Meter:** Built in. Zero-method type CdS meter coupled to shutter dial and aperture setting. Through-the-lens-and-mirror (TTL) system. EV 0.5 (with ASA 100 film, f/1.2 at 1 sec.) -EV18 (f/16 at 1/1000 sec.) one-stage system. ASA 25-2000. Powered by one 1.3v M20 (#625) mercury battery.



Photometry: Exposure meter functions with the CdS actuating lever. Continuous photometry is possible with the lock lever. Battery tester built in.

Measuring of Ultra-low Illumination: EV1.5 1/2 sec.-EV-4.5 30 sec. at f/1.2 can be measured with the attachment of the Canon Booster (auxiliary meter for extremely dim lighting).

Flash Synchronization: Synchronizing possible for FP and X contacts and FP class, M class, MF class and electronic flash units. Self-timer: Built in.

Film Advancing: Single operation 174° winding lever, possible to wind with several short strokes. Film counter, self-resetting type.

Film Loading: Back cover opening, using any standard 35mm film in cartridge. The QL mechanism makes possible simple and quick loading of film.

Size: 144 x 91 x 43mm (5-5/8" x 3-5/8" x 1-3/4")

Weight: 755 grams (1 lb. 10-5/8 oz.)—body only.

#### Canon FT QL

Similar to Rellix QL, with the following exceptions:

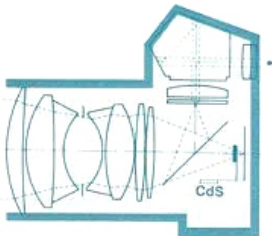
Mirror: Shockless quick-return system. Mirror can be fixed upwards.

Exposure Meter: Through-the-lens (TTL) system, EV2.5 (with ASA 100 film, f/1.2 at 1/4 sec.)-EV18 (f/16 at 1/1000 sec.) one-stage system.

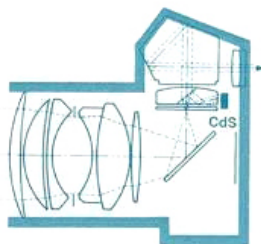
Measuring of Ultra-low Illumination: EV2.5 1/4 sec. -EV-3.5 15 sec. at f/1.2 can be measured.

Size: 144 x 93 x 43mm (5-5/8" x 3-5/8" x 1-3/4")

Weight: 740 grams (1 lb. 10-1/8 oz.)—body only.



Canon Pellix QL



Canon FT QL

#### Canon FX

Viewfinder: Eye-level system using pentagonal prism.

Focusing Glass: Using Fresnel lens and split-image rangefinder.

Mirror: Shockless quick-return system. Mirror can be fixed upwards.

Aperture: Fully automatic pre-set aperture built in. Pre-set release possible.

Shutter: 1/1000-1 sec. and B (T) X focal plane shutter.

Exposure Meter: Built in. Match-needle type CdS meter coupled to shutter dial. EV1 (with ASA 100 film, f/1.4 at 1 sec.)-EV18 (f/16 at 1/1000 sec.) high and low two-stage shifting system.

ASA10-800. Powered by one 1.3v M20 (#625) mercury battery. Photometry: Exposure meter functions with the ON-OFF-CHECK switch and the sensitivity shifting knob. Battery tester built in.

Flash Synchronization: Synchronizing possible for FP and X contacts and FP class, F class and electronic flash units.

Self-timer: Built in.

Film Advancing: Single operation 160° winding lever, possible to wind with several short strokes. Film counter, self-resetting type.

Film Loading: Back cover opening, using any standard 35mm film in cartridge.

Size: 141 x 90 x 43mm (5-1/2" x 3-1/2" x 1-3/4")

Weight: 670 grams (1 lb. 7-5/8 oz.)—body only.

Specifications are subject to change without notice.



Canon FX is an SLR camera with maximum operating versatility. It features a built-in CdS exposure meter that is coupled to the shutter dial, a fully automatic pre-set aperture, a mirror lock device and a compact pentaprism. This quality camera is designed for excellent holding with all the high-performance mechanisms

# Interchangeable Lenses



## Wide-Angle Lenses

Lenses with short focal lengths have deep depth-of-field, and so, sharply focused pictures are obtainable with just a slight closing of the aperture. Therefore, wide-angle lenses are most ideal for snapshots. Perspective can also be exaggerated with this type of lens and so it is possible to give unusual impact to short distance shots. Furthermore, because of its wide angle-of-view it is very convenient for taking pictures even in cramped places where there is little space to step back.

## Standard Lenses

Standard lenses are designed for general photography such as snapshots, scenery and portraiture. They are usually of fast speeds which make them most effective for indoor and nighttime photography. Standard lenses also have very high resolving power and are widely acknowledged as being very useful for close-up photography, copy work and macrophotography.



## Telephoto Lenses

Lenses with focal lengths between 85mm and 200mm have the best perspective and capture the subject largely and clearly. That is why these lenses are suited for photographs with no image distortion such as portraiture and commercial photography. Their small size and light weight also make them ideal for taking snapshots of distant subjects and for shooting sporting events.

## Zoom Lenses

A single zoom lens does the work of a number of standard and telephoto lenses. Using a zoom lens from a stationary position you can compose your picture exactly as you want it. And by utilizing your camera's time exposure feature while zooming the full range, you can create a dynamic effect in your pictures which cannot be accomplished with other lenses.

## Extra-Long-Telephoto Lenses

Lenses in this group are absolutely indispensable for clear delineation of subjects from far distances, such as, shooting of wild animal

life, horse racing and sporting events. Furthermore, its aperture characteristics make such unique photographic effects possible as the blurring out of the background and the elimination of perspective.

## Lenses Most Commonly Used

In the telephoto lens field, the most popular is the Canon Lens FL 200mm F3.5. It is best suited for the mechanisms of the SLR camera when shooting distant subjects deliberately and without hurry.

In the wide-angle field, most camera users use the 35mm lens. Besides the 35mm lens you should also possess Canon's super-wide-angle lens FL 19mm F3.5R. It is the highest performance lens in this field because it gives normal delineation despite its wide angle-of-view.

For those who are principally interested in telephotography, we recommend our sharp and lightweight zoom lenses, FL 55-135mm F3.5, FL 100-200mm F5.6 and FL 85-300mm F5.

Lens	Type	Angle of view	Aperture system	Pre-set aperture release mechanism	Magnification	Lens composition	Minimum aperture	Distance scale		Attachment size (mm)		Hood	Case	Coating	Weight	
								In feet	In meters	Cap size	Filter size				g	lb. - oz.
FL19mm F3.5R	Super-wide-angle	96°	Automatic	A-M ring	0.38x	11 elements in 9 components	16	1.75-20 <sup>∞</sup>	0.5-7 <sup>∞</sup>	80	Series No. 9	—	Exclusive	Amber	500	1 - 1.5/8
FL28mm F3.5	Super-wide-angle	75°	Automatic	A-M ring	0.56x	7 elements in 7 components	16	1.5-10 <sup>∞</sup>	0.4-3 <sup>∞</sup>	60	58	W-60-B	C	Amber	240	8-1/2
FL35mm F2.5	Wide-angle	64°	Automatic	Aperture release ring	0.7x	7 elements in 5 components	16	1.5-10 <sup>∞</sup>	0.4-3 <sup>∞</sup>	60	58	W-60-A	C	Magenta	352	12-3/8
FL35mm F3.5	Wide-angle	64°	Automatic	A-M ring	0.7x	6 elements in 6 components	16	1.5-10 <sup>∞</sup>	0.4-3 <sup>∞</sup>	50	48	W-50-A	C	Multi-layer	270	9-1/2
FLP38mm F2.8	Wide-angle	59°	Automatic	Aperture release ring	0.76x	4 elements in 3 components	16	3-30 <sup>∞</sup>	0.8-8 <sup>∞</sup>	60	48	—	Exclusive	Magenta	210	7-3/8
FL50mm F3.5	Standard (Macro)	46°	Automatic	A-M ring	1x	4 elements in 3 components	22	9.2in-20 <sup>∞</sup>	0.234-5 <sup>∞</sup>	60	58	S-60	Exclusive	Amber	295	10-3/8
FL50mm F1.8	Standard	46°	Automatic	A-M ring	1x	6 elements in 4 components	16	2-30 <sup>∞</sup>	0.6-10 <sup>∞</sup>	50	48	S-50	C	Magenta, Purple	280	9-7/8
FL50mm F1.4	Standard	46°	Automatic	A-M ring	1x	7 elements in 6 components	16	2-30 <sup>∞</sup>	0.6-10 <sup>∞</sup>	60	58	S-60	C	Amber, Purple	340	12
FL55mm F1.2	Standard	43°	Automatic	A-M ring	1.1x	7 elements in 5 components	16	2-30 <sup>∞</sup>	0.6-10 <sup>∞</sup>	60	58	S-60	C	Purple, Amber	480	1 - 7/8
FL85mm F1.8	Long-focus	29°	Automatic	Aperture release ring	1.7x	5 elements in 4 components	16	3.5-60 <sup>∞</sup>	1-20 <sup>∞</sup>	60	58	T-60	D	Magenta, Purple	445	15-3/4
FL100mm F3.5	Telephoto	24°	Automatic	Aperture release ring	2x	5 elements in 4 components	22	3.5-30 <sup>∞</sup>	1-10 <sup>∞</sup>	50	48	T-50	H	Purple	278	9-3/4
FL135mm F3.5	Telephoto	18°	Automatic	A-M ring	2.7x	4 elements in 3 components	22	5-100 <sup>∞</sup>	1.5-30 <sup>∞</sup>	50	48	T-50	E	Magenta	434	15-1/4
FL135mm F2.5	Telephoto	18°	Automatic	Aperture release ring	2.7x	6 elements in 4 components	16	5-100 <sup>∞</sup>	1.5-30 <sup>∞</sup>	60	58	T-60	F	Magenta	645	1 - 6-3/4
FL200mm F3.5	Telephoto	12°	Automatic	Aperture release button	4x	7 elements in 5 components	22	8-100 <sup>∞</sup>	2.5-30 <sup>∞</sup>	60	58	Built-in	G	Magenta	680	1 - 8
FL200mm F4.5	Telephoto	12°	Automatic	A-M ring	4x	5 elements in 4 components	22	8-100 <sup>∞</sup>	2.5-30 <sup>∞</sup>	50	48	Built-in	Exclusive	Magenta, Purple	555	1 - 3-5/8
FL55 -135mm F3.5	Zoom	43°-18°	Automatic	Aperture release button	1.1-2.7x	13 elements in 10 components	22	7-100 <sup>∞</sup>	2-30 <sup>∞</sup>	60	58	S-60	Exclusive	Amber	790	1 - 11-7/8
FL100-200mm F5.6	Zoom	24°-12°	Automatic	A-M ring	2-4x	8 elements in 5 components	22	8-100 <sup>∞</sup>	2.5-30 <sup>∞</sup>	57	55	Built-in	Exclusive	Magenta	650	1 - 6-7/8
FL85 -300mm F5	Zoom	29°- 8°	Automatic	Aperture release button	1.7-6x	15 elements in 9 components	22	12-200 <sup>∞</sup>	4-50 <sup>∞</sup>	75	72	Built-in	Exclusive	Magenta	1,840	4 - 7/8
R300mm F4	Long-telephoto	8°	Manual	—	6x	5 elements in 4 components	22	5	1.5	Special	48	Special	Special	Magenta	1,200	2 - 10-3/8
R400mm F4.5	Long-telephoto	6°	Manual	—	8x	5 elements in 4 components	22	10.2	3.1	Special	48	Special	Special	Magenta	1,700	3 - 12
R600mm F5.6	Extra-long-focus	4°	Manual	—	12x	2 elements in 1 component	32	20	6.4	Special	48	Special	Special	Purple	1,800	3 - 15-1/2
R800mm F8	Extra-long-focus	3°	Manual	—	16x	2 elements in 1 component	32	44.3	13.5	Special	48	Special	Special	Purple	1,900	4 - 3
R1000mm F11	Extra-long-focus	2.4°	Manual	—	20x	2 elements in 1 component	32	69	21	Special	48	Special	Special	Purple	1,800	3 - 15-2/1
FL-F300mm F5.6	Long-telephoto	8°	Automatic	A-M ring	6x	7 elements in 6 components	22	13-200 <sup>∞</sup>	4-50 <sup>∞</sup>	60	58	Built-in	Exclusive	Magenta	850	1 - 14
FL-F500mm F5.6	Long-telephoto	5°	Automatic	Pre-set release button	10x	6 elements in 5 components	22	33-600 <sup>∞</sup>	10-200 <sup>∞</sup>	105	95	Built-in	Exclusive	Amber	2,700	5 - 15-1/4

Note: FLP 38mm F2.8 is for use with Pellicle QL.

For lenses longer than 300mm, there are no distance scales. The shortest focusing distance is listed in the chart for reference.

## Changes in Angle-of-View

Comparison of the different angles-of-view when shooting a subject from the same distance but with different focal length lenses.



35mm



50mm



135mm

## Changes in Perspective

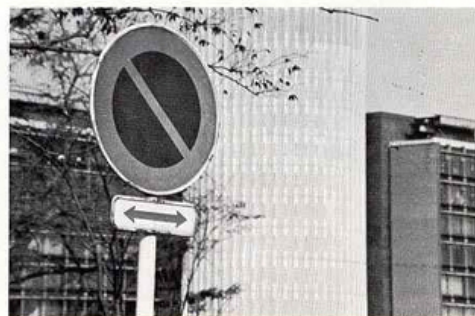
When photographing the main subject in the same size with different focal length lenses by changing the distance from the subject to the camera, the differences in perspective can be distinctly noticed.



35mm



50mm



135mm

## Changes in Aperture Effects

Variations in depths-of-field are obtained by changing the degree of opening of the lens aperture.



50mm f/5.6



200mm f/5.6

Close distance

Telephoto lenses have shallower depths-of-field.



50mm f/1.8

Medium distance



50mm f/11

Depth-of-field becomes deeper when opening of lens aperture is made smaller.

# Accessories for General Photography

An outstanding feature of Canon SLR cameras is that besides interchangeable lenses, numerous accessories are available to increase their performance and broaden their photographic range. Accessories include filters, lens hoods, camera holder and flash unit which are sufficient for general photography.

## Filters

Various types of 40, 48, 55, 58 and 72mm screw-in type filters are available for special effects in both black and white and color photography.

Series No. 9 filters for exclusive use with FL 19mm F 3.5R lens are also available. The external diameter of the Series No. 9 filters is 72mm and an exclusive filter holder must be used to match 77mm thread diameter of the lens. Refer to page 10.

## Lens Hoods

A lens hood is essential for taking clear pictures because it shields the lens from excess rays outside the angle-of-view. It is particularly effective for preventing glare when taking pictures against the light. All hoods can be selected by matching their sizes with the type of lens and the cap size, i.e., external diameter of lens, except for a few hoods that are used for only certain lenses.

"S" stands for standard, "T" for telephoto and the figures indicate the external diameter of the lens. Therefore, an S-60 hood means that it is for a standard lens with a cap size of 60mm.

S-50: FL 50mm F1.8

S-60: R 50mm F1.8, R 58mm F1.2, FL 50mm F1.4, FL 55mm F1.2

T-40: R 100mm F3.5

T-50: R 85mm F1.9, R 135mm F3.5, FL 100mm F3.5

T-60: R 85mm F1.8, R 100mm F2, R 135mm F2.5, R 200mm F3.5, R 55-135mm F3.5, FL 85mm F1.8, FL 135mm F2, FL 200mm F3.5, FL 55-135mm F3.5

Exclusive-Type Hoods: FL 28mm F3.5, FL 35mm F2.5, R 135mm F2.5, extra-long-telephoto lenses of R 300mm and over.

## Camera Holder R4-2

The Camera Holder R4-2 is an accessory that is attached to the tripod or copy stand to firmly hold the camera. It is especially effective when used with telephoto lenses. The changing of camera position from horizontal to vertical and vice versa can be performed very easily.

## Canon Release

The all-metal durable Canon Release is an indispensable accessory when shooting pictures with tripod at slow shutter speed and in close-up photography, copy work and macrophotography.





## Flash Units

In ordinary photography, exposure failures have been completely eliminated with the use of TTL built-in exposure meters or coupled exposure meters. However, flash photography becomes necessary when catching a moving subject indoors or in night photography. There are now many different types of flashbulbs available for both black and white and color photography. Effective flash photography is possible by using multiple flashbulbs or by bounce flash. Speedlights have also been greatly improved with the use of transistor circuits and NiCd accumulator. See page 11.

## Softomats

Softomat is an optical flat surface glass coated with a 1 micron thick film of tiny dots. It is effective in softening pictures utilizing the diffraction of light. In the same manner as filters, it is simply attached to the front shooting lenses or lenses on enlargers to obtain a softly focused picture. There are two types of Softomats, Nos. 1 and 2, to be used according to the degree of softness desired. They come in four sizes in Series Nos. 6 to 9. When using, they are attached to the adapter ring of the lens hood.

Series No. 6: R 100mm F3.5

Series No. 7: FL 50mm F1.8, R 85mm F1.9, FL 100mm F3.5, R 135mm F3.5

Series No. 8: R 50mm F1.8, R 58mm F1.2, R 85mm F1.8, R 100mm F2, R 55-135mm F3.5, R 135mm F2.5, FL 50mm F1.4, FL 55mm F1.2, FL 85mm F1.8, FL 55-135mm F3.5, FL 135mm F2.5

Series No. 9: FL 85-300mm F5 (Exclusive adapter ring should be used.)

## Lens Caps, Lens Dust Caps and Body Covers

Lens Cap 50mm: R 135mm F3.5, FL 50mm F1.8, FL 100mm F3.5

Lens Cap 60mm: R and FL lenses with 60mm external diameter

Lens Cap 75mm: FL 85-300mm F5

Lens Cap 80mm: FL 19mm F3.5R

Lens Dust Cap R: All Canon lenses (except FL 19mm F3.5) are applicable.

Camera Cover R: All Canon cameras are applicable.

## Gadget Bag 3

### Lens Cases

Type C: R 35mm F 2.5, R 50mm F 1.8, R 58mm F 1.2, FL 35mm F2.5, FL 50mm F1.4, FL 50mm F1.8, FL 55mm F1.2

Type D: R 85mm F 1.8, R 100mm F 3.5, FL 85mm F 1.8

Type E: R 100mm F 2, R 135mm F 3.5

Type F: R 135mm F 2.5, FL 135mm F 2.5

Type G: R 200mm F 3.5, FL 200mm F 3.5

Type H: FL 100mm F 3.5

Exclusive-Type Lens Cases: FL 19mm F 3.5R, FLP 38mm F2.8, R 55-135mm F3.5, FL 55-135mm F3.5, FL 85-300mm F5

Exposure Factor	Type	Type	Filter Characteristics
1	UV	For black & white and color	<ul style="list-style-type: none"> <li>Absorbs only ultra-violet rays. Especially effective at seaside, and in high mountains. Recommended for use in color photography.</li> </ul>
1.5	Y 1	} For black & white	<ul style="list-style-type: none"> <li>Increases contrast of black and white film. Enhances clouds, darkens the blue sky. Brightens red and yellow.</li> <li>Darkens blue, increases yellow and red perceptibly. Good for contrasts especially in distant landscapes.</li> </ul>
2	Y 3		
3	O 1		
6	R 1	For black & white	<ul style="list-style-type: none"> <li>Makes strong contrasts. May also be used with infrared film.</li> <li>Prevents red from turning radically into white. Lightens sky and face appropriately, and reflects the lightness of fresh greenery.</li> </ul>
3	G 1	For black & white	
4	ND 4	} For black & white and color	<ul style="list-style-type: none"> <li>ND 4 reduces light values by 1/4, ND 8 by 1/8. No effect on the reproduction of colors.</li> </ul>
8	ND 8		
1	SKYLIGHT	For color	<ul style="list-style-type: none"> <li>Acts to harmonize the blue sky and shade.</li> <li>For use with daylight type film under the cloud.</li> <li>For use with universal type (color negative) film under the cloud or tungsten type film under the morning sun or sunset.</li> <li>For use with tungsten type film under sunlight.</li> <li>For use with daylight type film under the morning sun or sunset.</li> <li>For use with daylight type film and clear flash bulb.</li> <li>For use with daylight type film under tungsten light.</li> </ul>
1.5	CCA 4	For color	
2	CCA 8	For color	
2	CCA (12 equiv.)	For color	
1.5	CCB 4	For color	
2	CCB 8	For color	
3	CCB (12 equiv.)	For color	

	Acceptable Flashbulbs	Coupling	Power Source	Exposure Calculating	Flash Test	Extension	Self Extension	Reflector	Direction of Flash Head
FLASH V-3	Swan-base type 2M type AG type PH type(w/adapter)	Continental-type socket and accessory shoe	15v 10F 15 laminated battery Mallory M-504 Eveready 504	Built-in calculating dial	Possible	Possible w/ Extension Cord Vc	Possible w/ Extension Cord Vc	Telephoto/ wide-angle 2-way folding type	Movable vertically 90°
FLASH J-2	Swan-base type AG type(w/adapter) PH type(w/adapter)	Continental-type socket and accessory shoe	22.5v 15F 15 laminated battery Mallory M-504 Eveready 504	Built-in calculating dial	Possible	—	Possible w/ Extension Cord Vc	Folding type	—
FLASH J-3	AG type PH type	Continental-type socket and accessory shoe	15v 10F 15 laminated battery Mallory M-504 Eveready 504	Built-in calculating dial	Possible	—	Possible w/ Extension Cord Vc	Fixed	—
FLASH QUINT	AG-1 (Five Continuous flashes are possible by inserting the bulbs at one time)	Continental-type socket and accessory shoe	15v 10F 15 laminated battery Mallory M-504 Eveready 504	Built-in calculating dial	Possible	—	Possible w/ Extension Cord Vc	Fixed	—
CUBE FLASH	Flashcube	Continental-type socket and accessory shoe	Two 1.5v N batteries Mallory M-910F Eveready 504	Calculating chart	—	—	Possible w/ Extension Cord Vc	—	—

	Power Source	Coupling	Guide Number	Flash Intervals	Available Flashes	Flash Angel	Flash Angle	Components
SPEEDLITE 102	2-way: • Three 1.5v penlight (AA) batteries • AC household power source (100-240v)	Continental-type socket and accessory shoe	W/ ASA 100 film : Color, B & W; 20m (65ft.)	W/ Manganese batteries : 8-10 sec. W/ Alkaline batteries : 7-10 sec.	W/ Manganese batteries : Approx. 50 flashes W/ Alkaline batteries : Approx. 200 flashes	1/1,000 sec.	Horizontal position : 60° Vertical position : 50°	Main body, AC cord, plug-adaptor for 200-240v
SPEEDLITE 200	3-way: • NiCd accumulator • Four 1.5v penlight (AA) batteries • AC household power source	Continental-type socket and bracket	W/ ASA 100 film : Color; 20m(65ft.) B&W; 28m(90ft.)	W/ NiCd accumulator : 8-10 sec. W/ penlight batteries : 10-15 sec.* W/AC: Under 6 sec. Built-in pilot lamp	W/ NiCd accumulator : Approx. 80 flashes (Charging time, 14 hrs.) W/ Penlight batteries : 30 flashes W/ AC : Approx. 20,000 flashes	1/1,000 sec.	Horizontal position : 70° Vertical position : 60°	Main body, bracket, NiCd accumulator, charger, battery magazine, AC cord (115-240v with transformer or 100v use.)

Electric Circuit: Transistorised constant voltage system. Color Temperature: 5500°-6000°K. Exposure Calculation: Built-in calculating dial. Flash Test: Possible.

\* Longer intervals necessary in case of continuous use of over 10 flashes.



# Accessories for Close-Up Photography

Even if the lenses are set at the minimum distance scale, they cannot bring the subject into focus at any distance closer than 50cm (approx. 1 ft. 7 in.) with standard types nor closer than 1 meter (approx. 3 ft. 4 in.) with other types. Close-up photography, including macrophotography and photomicrography, is for closing up further on a subject and photographing it clearly at a larger size. This is where accessories for close-up photography, such as close-up lenses, extension tubes, bellows and slide duplicators, become necessary. Close-up photography is important in such fields as education and scientific research, and has recently become very popular. By choosing an interesting subject, extraordinary photos can be taken with various combinations of close-up accessories. Flowers, insects, buds, tiny mechanical parts and small objects of art are examples of interesting subjects. Close-up photography also includes copy work such as photographing documents, paintings, pictures and charts.

Close-up photography is the field in which SLR camera performs best and it is also where Canon's superior TTL system is put to its maximum effective use. In other words, the Canon SLR cameras are ideal cameras for close-up photography.

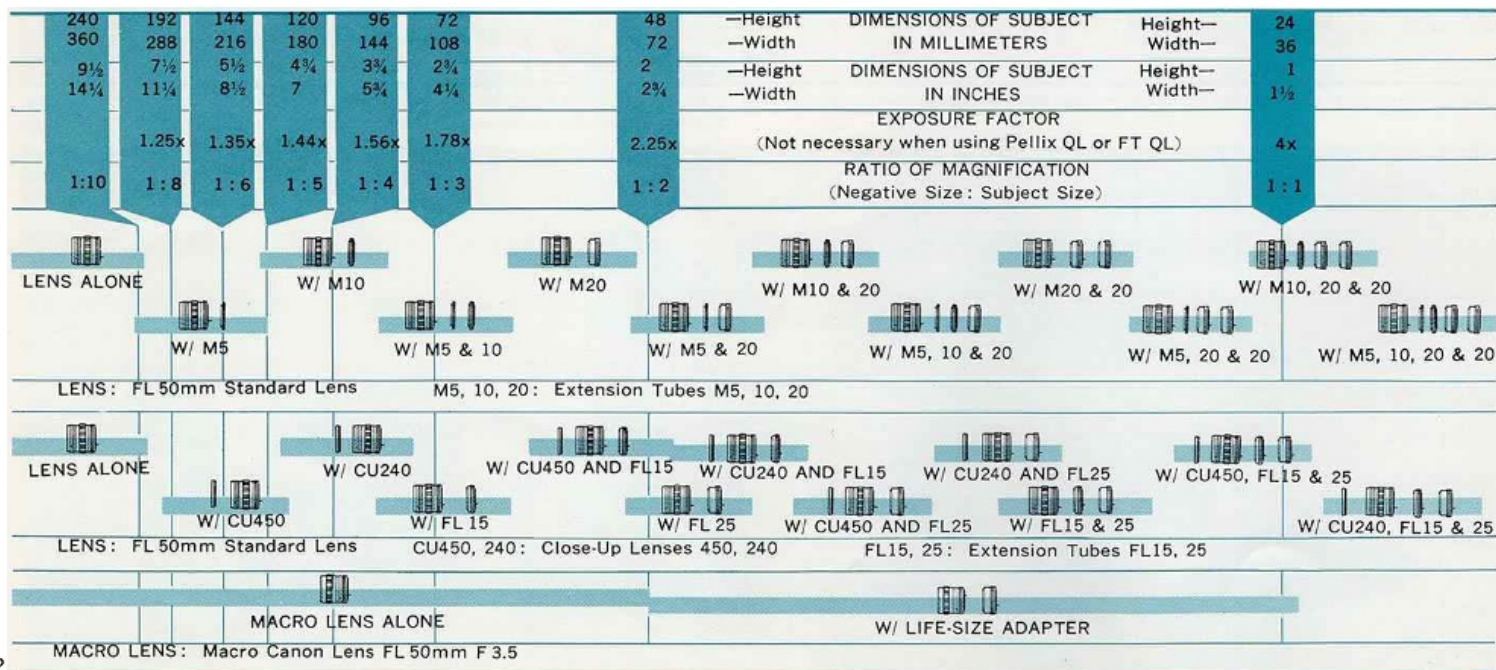
## Close-Up Lenses

Close-up lenses are used for the most simple of close-up photography. Just screw it onto the front of the taking lens. Close-up lenses with two sizes of 48mm and 58mm and with two differing ranges, 450 and 240, are available.

Type	Usable Lenses	Subject Distance	Picture Area
48mm 450	FL 50mm F1.8 (also other lenses with 48mm screw diameter)	550-340mm (1' 9-5/8"-1' 1-3/8")	315 x 210-165 x 110mm (1' 3/8" x 8-1/4" -6-1/2" x 4-3/8")
		330-260mm (1' 1"-10-1/4")	165 x 110-110 x 75mm (6-1/2" x 4-3/8" -4-3/8" x 3")
58mm 450	FL 55mm F1.2 (also other lenses with 58mm screw diameter)	554-344mm (1' 9-1/4"-1' 1-5/8")	296 x 197-157 x 105mm (11-5/8" x 7-1/4" -6-1/4" x 4-1/8")
		340-268mm (1' 1-3/8"-10-1/2")	157 x 104-107 x 72mm (6-1/8" x 4-1/8" -4-1/4" x 2-7/8")
58mm 240	Exclusive for FL 55-135mm F3.5	2030-1110mm (6' 7-7/8"-3' 7-3/4")	1190x790-230x150mm (3' 10-7/8" x 2' 7-1/8" -9" x 5-7/8")

## FL and M Series Extension Tubes

The extension tube is used for expanding the photographic range to higher magnification close-ups. One or a combination of extension tubes are attached to change the draw-out length of the lens.



The Extension Tubes FL15 and FL25 (numbers indicate the length of the lens in millimeters respectively) are designed so that they couple to the pre-set aperture mechanism. These Extension Tubes can be used jointly with the close-up lens which enables close-up photography up to life-size in a variable range.

The Extension Tubes M5, M10 and M20 are used with either FL or R series Canon Lenses. A combined use of any one of the M series Tubes and the M20 enables a continuous range of close-up photography up to life-size with a standard lens.

### Macro Canon Lens FL 50mm F3.5

This is one of the highest quality lenses for close-up photography use. This lens, with its outstanding resolving power, is designed to fully meet all technical requirements in close-up photography. The draw-out length is greatly increased with the use of this lens, and with the lens itself it is possible to approach a subject up to 23cm (9 in.), i. e., 0.5X. With the attachment of the Life-Size Adapter photography up to life size is possible. This high performance lens is also designed so that the aperture is automatically compensated according to the amount of exposure necessary at close range. Aberration correction is so accurate with this lens that it gives superb performance even at maximum aperture opening. This lens gives the same sharpness to pictures in ordinary photography also. With this single lens you can take close-up photographs to your heart's content, and in conjunction with a bellows you can also enjoy the thrills of macrophotography.

### Copy Stand 3F

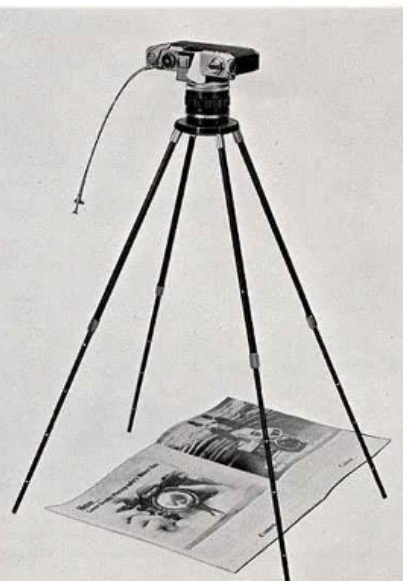
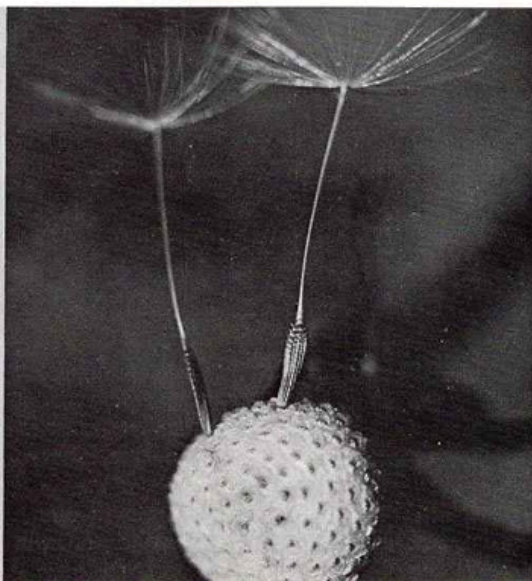
The Copy Stand 3F is for mass-producing copy work on a professional basis. The sturdy arm holds the camera steady for blur-free continuous shooting. By utilizing other accessories, this device can also be used for bellows photography, photomicrography and other copy work in general. Magnification can be easily changed according to the accessory used. This copying device is available in two different types. One is the desk type which comes equipped with the necessary metal fittings for attaching onto a desk or table, and the other is the base board type. Structure: base board (or metal fittings for attaching onto a desk or table), stanchion, stationary arm, Camera Holder R4-2, case, vinyl cover.

### Handy Stand F

Canon Handy Stand F is light in weight and of the assembly type which makes it convenient for carrying around. It is also easy to operate. Subjects of 257mm x 397mm (10-1/8" x 15-5/8") to 128mm x 199mm (5" x 7-7/8") sizes can be photographed with the use of standard lenses.

### Waist-Level Viewer 2

The Waist-Level Viewer is very convenient for copy work, close-up photography and shooting the subject from low-angle because the viewfinder eyepiece is facing upwards. Eyepiece is adjustable.



240	192	144	120	96	72	48	—Height	DIMENSIONS OF
360	288	216	180	144	108	72	—Width	SUBJECT IN MILLIMETERS
9½	7½	5½	4¾	3¾	2¾	2	—Height	DIMENSIONS OF
14¼	11¼	8½	7	5¼	4¼	2¾	—Width	SUBJECT IN INCHES
		1.35x	1.44x	1.56x	1.78x	2.25x		EXPOSURE FACTOR
								(Not necessary when using Pellix QL or FT QL)
1 : 10	1 : 8	1 : 6	1 : 5	1 : 4	1 : 3	1 : 2		RATIO OF MAGNIFICATION
								(Negative Size : Subject Size)



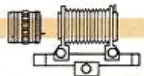
Height—	24	12	6
Width—	36	18	9
Height—	1	1/2	1/4
Width—	1 1/2	3/4	3/8
	4x	9x	25x
	1 : 1	2 : 1	4 : 1



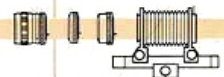
MACRO LENS W/ MACROPHOTO COUPLER FL



STANDARD LENS W/ MACROPHOTO COUPLER FL, EXTENSION TUBE AND MOUNT CONVERTERS A & B



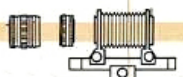
STANDARD LENS W/ BELLOWS FL



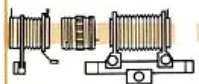
MACRO LENS W/ FL SERIES EXTENSION TUBES AND BELLOWS FL



MACRO LENS W/ FL & M SERIES EXTENSION TUBES



STANDARD LENS REVERSED W/ MACROPHOTO COUPLER FL AND BELLOWS FL



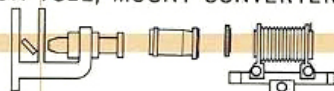
STANDARD LENS W/ SLIDE DUPLICATOR AND BELLOWS FL



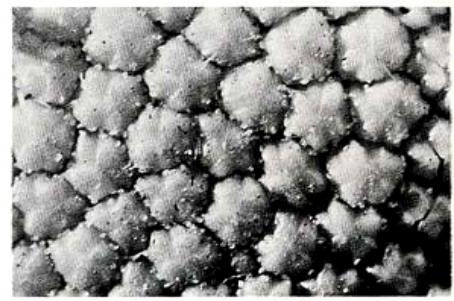
STANDARD LENS REVERSED W/ MACROPHOTO COUPLER FL, FL & M SERIES EXTENSION TUBES AND BELLOWS FL

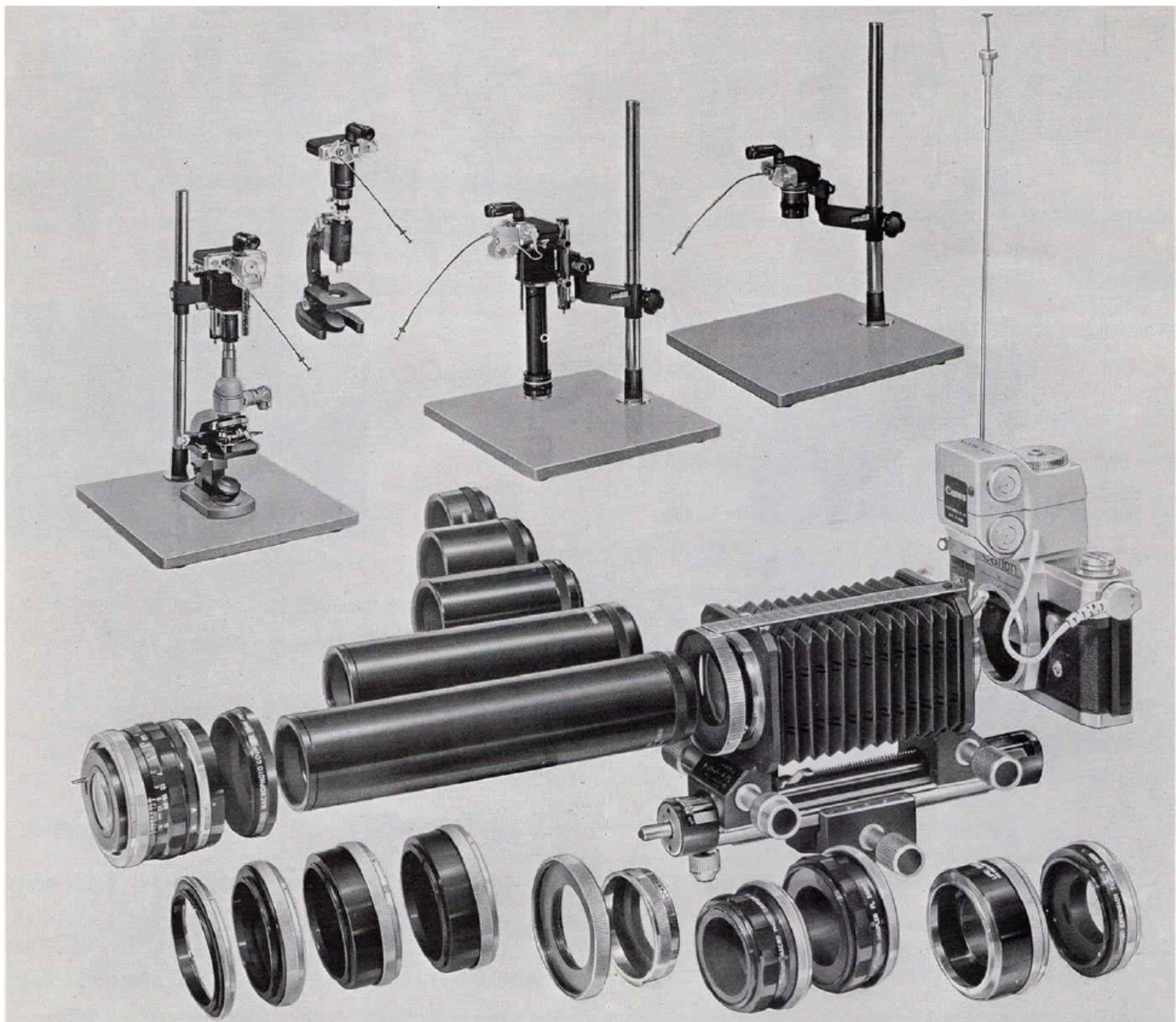


STANDARD LENS REVERSED W/ MACROPHOTO COUPLER, EXTENSION TUBE, MOUNT CONVERTER A AND BELLOWS FL



MOUNT CONVERTER A, MICROPHOTO HOOD AND MICROSCOPE





# World of Macrophotography

One of the outstanding features of cameras with interchangeable lenses is that pictures of larger than life-size is possible. The purpose of macrophotography is to clearly photograph tiny subjects and then enlarge the prints 50 to 100 times in order to study or appreciate them. The grains of minerals, buds of plants, skins of animals... these and a whole world of new vision is yours through macrophotography.

Canon's SLR cameras are not only highly effective for macrophotography but Canon's absolutely accurate TTL exposure system in Pellix QL and FT QL also eliminates calculations for exposure compensation. You'll be more than surprised at the superb results that Canon's all-round SLR camera can produce.

## Accessories for Macrophotography

Macrophotography with Canon SLR cameras is enabled with various accessories in numerous combinations.

### Bellows FL and Bellows R

The bellows is extremely convenient because the draw-out length can be freely adjusted. When Bellows FL or R is used in conjunction with a 50mm lens, the photographic range becomes from approximately 0.7X close-up to 3X macrophotography. Bellows FL has a pre-set aperture coupling mechanism while Bellows R is of the manual aperture type. Bellows FL accepts the Slide Duplicator.

### Extension Tubes

Besides FL and M series Extension Tubes, there are six types of Extension Tubes from 25mm to 200mm, which are originally for Canon 7S (screw-mount rangefinder-type camera) use.

### Macrophoto Coupler FL

Macrophoto Coupler FL is necessary when the lens is attached in reverse direction. It is indispensable for shooting larger-than-life-size pictures and can be used without decreasing the performance of the lens. Macrophoto Coupler FL has an FL mount and a draw-out length of 13mm for focusing and can be mounted to Bellows FL or R, Extension Tube FL 15 or FL 25 and SLR camera. Two sizes of 48mm and 58mm are available.

### Macrophoto Coupler

This Macrophoto Coupler is of the screw mount type and can be connected to screw mount type extension tubes. Originally for Canon 7S use.

## Connections Between Macrophoto Couplers and Adaptable Lenses

Macrophoto Coupler FL 48mm: All lenses with 48mm screw diam-

eter such as FL 50mm F1.8. (FL mount)

Macrophoto Coupler FL 58mm: Lenses with 58mm such as FL 55mm F1.2, FL 50mm F1.4 and FL 50mm F3.5. (FL mount)

Macrophoto Coupler 48mm: All lenses with 48mm screw diameter. All lenses for rangefinder type cameras such as FL 50mm F1.8. (Screw mount)

Macrophoto Coupler 58mm: All lenses with 58mm screw diameter such as FL 55mm F1.2, FL 50mm F1.8 and FL 50mm F1.4. (Screw mount)

- Macrophoto Coupler FL is used for attaching the lens in reverse direction to camera body, Bellows FL or R, or various types of Extension Tubes.
- Screw mount type Macrophoto Couplers can be connected directly to screw mount type Extension Tubes. They can be mounted on FL mounts with the use of Lens Mount Converter A.

### Lens Mount Converter A

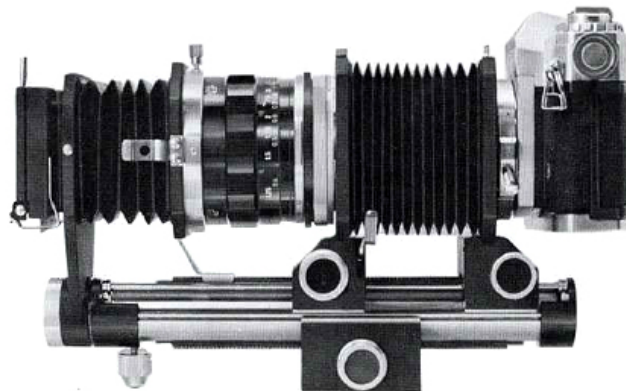
A connecting accessory used for mounting screw mount type lenses and Extension Tubes on FL mounts. Extension Tubes for Canon 7S use can be attached to Bellows FL or R.

### Lens Mount Converter B

A connecting accessory used for attaching lenses and Extension Tubes with FL mounts onto screw mounts. Its function is just the opposite to that of Lens Mount Converter A and connects FL lenses to screw mount type Extension Tubes.

### Slide Duplicator

A device that is attached to Bellows FL for duplicating slides at approximately life size.



# Exposures for Close-Up Photography and Macrophotography

Basically, exposure meters use the exposure value (EV) when the lens is set at infinity, i. e., where it is in the closest position to the film. Within the range of a normal distance scale, film latitude allows negligible difference of the exposure value. Even when shooting a subject with a close-up lens, the draw-out length of the lens is about the same as in general photography and so exposure factor compensation is unnecessary.

In macrophotography, the lens is drawn out with a Bellows or Extension Tubes and the distance to the film plane is greatly lengthened. This means that the light volume indicated by the  $f/$  number on the taking lens will not reach the film plane and the actual exposure value should be obtained by mathematical calculation. However, by using Canon Pellix QL or FT QL which incorporate the TTL exposure system the proper exposure is always obtained without any exposure factor compensation.

## TTL Always Measures Exposures Correctly

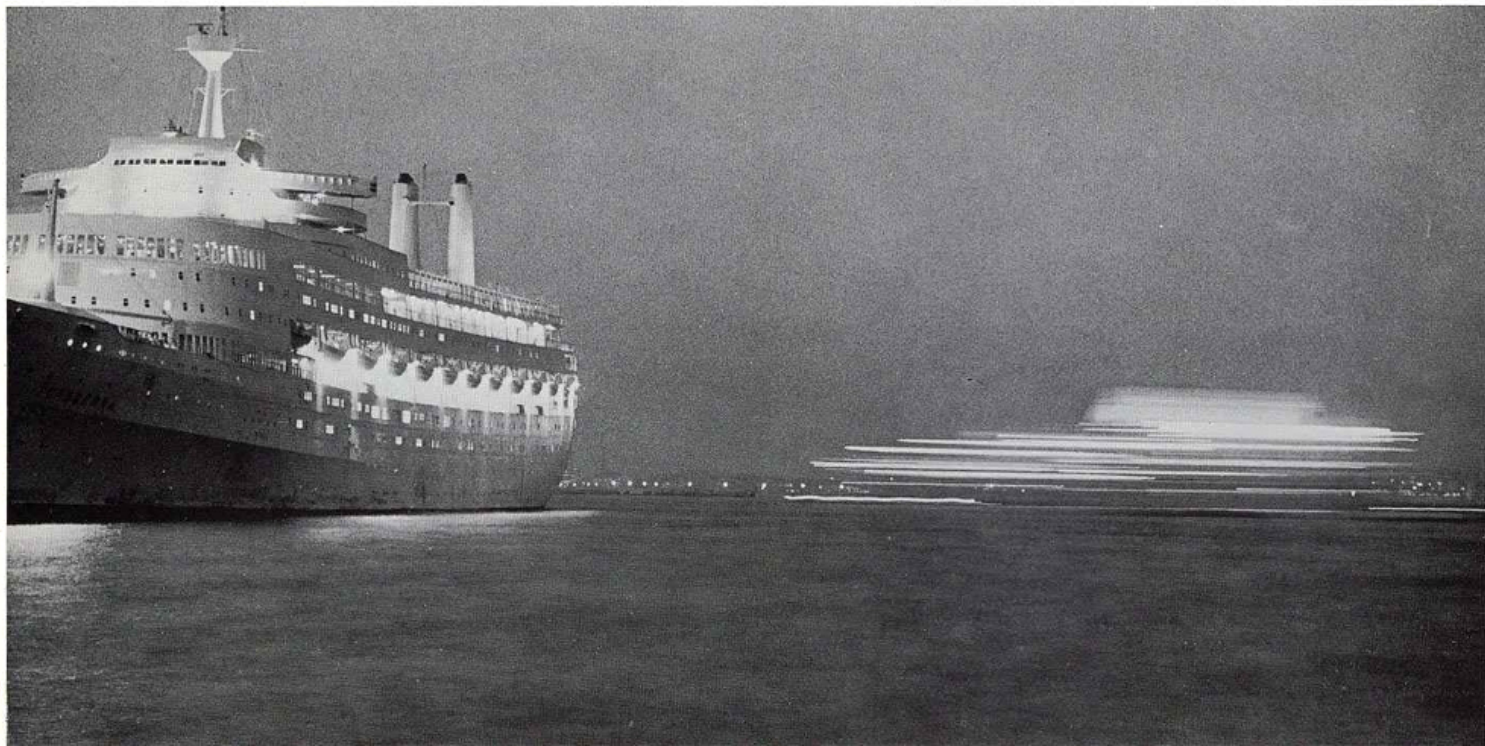
TTL system always gives correct and accurate exposure measurements regardless of how the aperture opening changes. It measures the light passing through the taking lens and reaching the film plane.

Therefore, even when the lens is drawn out greatly by Bellows or Extension Tubes the correct and accurate exposure can be obtained by following the indications of the built-in exposure meter with no mathematical calculations.

## Booster Solves Problem of Faint Light Volume

In the field of macrophotography, the light volume which reaches the film plane rapidly decreases when the photographic magnification of the subject increases. And even when photographing outdoors you will very often be faced with dark subjects. There are many cases in which the ordinary TTL cameras are not sufficient to meet faint light conditions. Since there are many cases in the field of macrophotography where the subject must be photographed with a small aperture opening, the need arises for such an exposure meter in which light in the minus area of the exposure value can be measured.

The Canon Booster which is developed exclusively for the Canon Pellix QL and the FT QL completely solves this problem. The Canon Booster has increased the measuring range to include such faint light volumes as EV-4.5 in Pellix QL and EV-3.5 in FT QL.



# Photomicrography

Photomicrography requires a great amount of experience because a microscope with its highly magnified optical system is used as a medium. Especially, the determination of the exposure is affected by various factors and, thus, photomicrography could not until recently be performed as easily as other fields of photography. However, Canon FT QL and the Canon Booster have completely eliminated the problem of exposure measurements. Photomicrography can now be easily and quickly performed without failure if only the handling of the microscope and the lighting are done properly.

## Photomicrography with Canon SLR Cameras

Using the Microphoto Hood to connect the microscope eyepiece and the camera, the connections are made in the following manner:

Camera+Bellows FL (or R) + Lens Mount Converter A  
+Microphoto Hood+Microscope

If photomicrography is performed under these connections, the length of the camera side (length of the lens hood) can be changed, and because the magnification is not fixed, it is possible to crop unnecessary parts of the subject. And minor changes in magnifica-

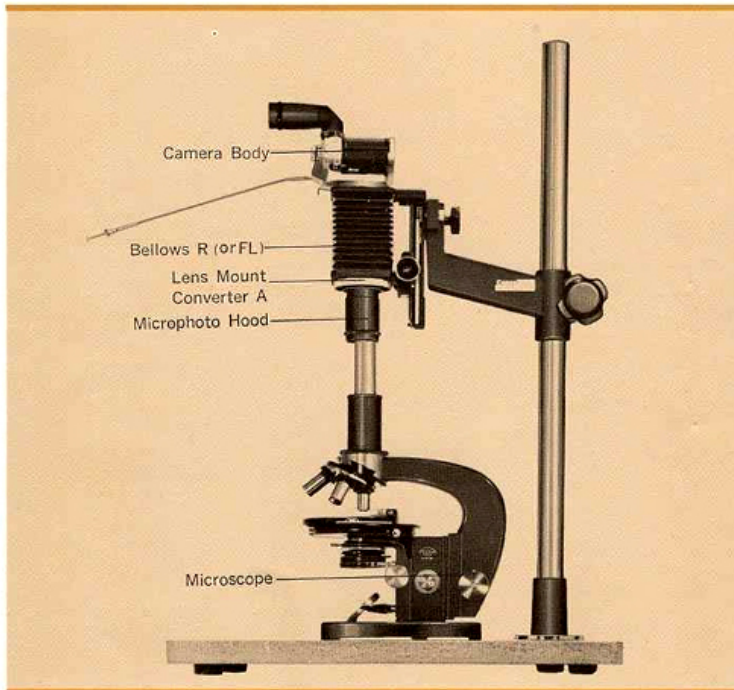
tion are possible within the expansion and contraction range of the hood even after the bellows has been removed.

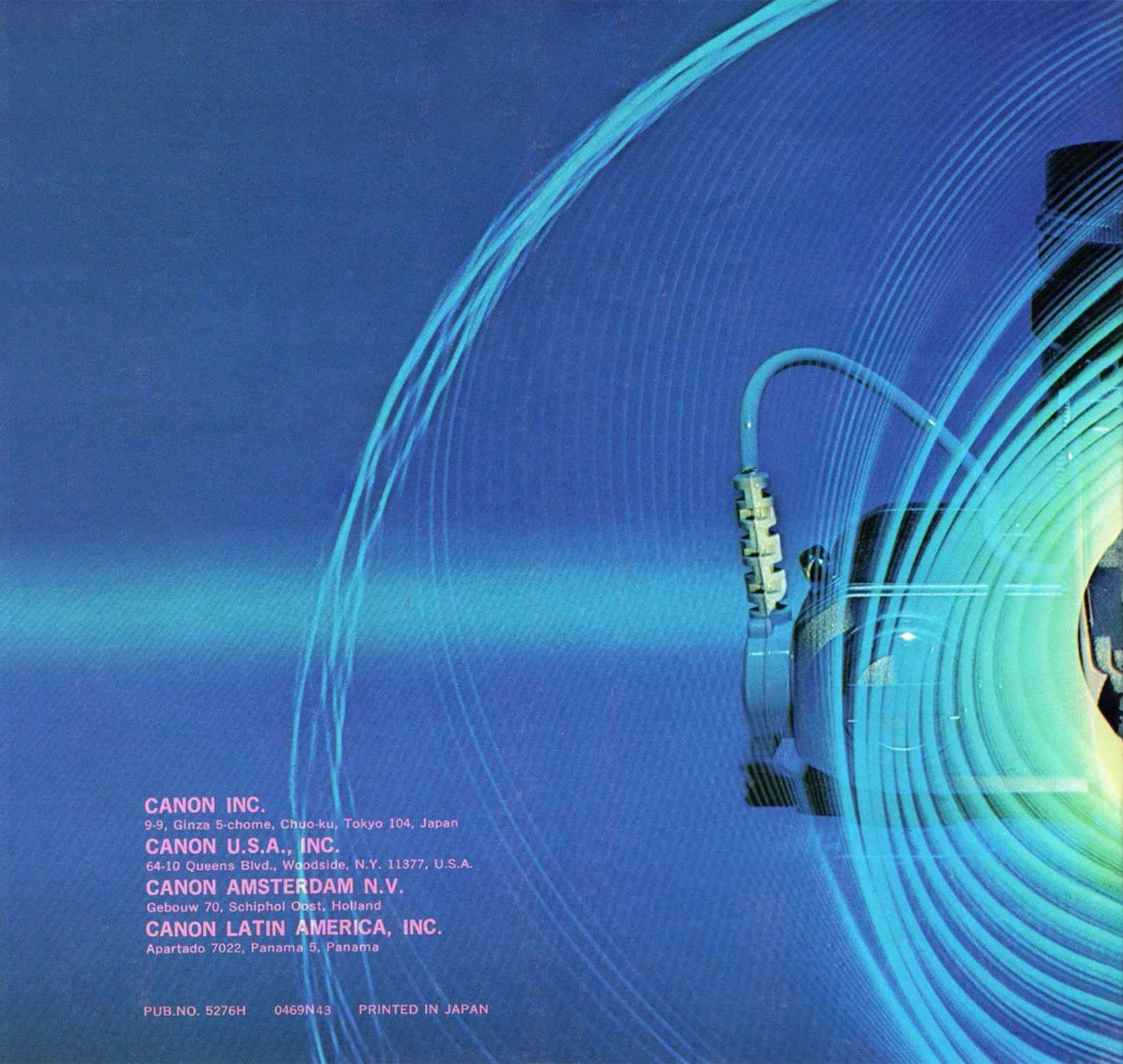
## Microphoto Hood

An expandable and contractible hood that connects the microscope and the camera.

The Canon logo is displayed in white text on a dark orange rectangular background. A white arrow points from the left towards the logo.

Having read the foregoing, you may have now discovered that with a Canon Single-Lens Reflex Camera you can make explorations into the interesting field of close-up photography. Once you start to look around for close-up subjects you will discover that they are countless. With the aid of various attachments and accessories, a whole new world will be opened to you through close-up photography.





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