

9. CLEANING AND MAINTENANCE TIPS

- a. The lens should always be capped when not in use. Like other precision optics, it should never be simply wiped with tissue since this may abrade the surface with any dust clinging to it or on the lens.
- b. Any accumulated dust should occasionally be blown off with a syringe or available blower brush designed for this purpose. To remove fingerprints or smears, shred the edge of a lens tissue and roll it to make a swab; dampen it with a lens cleaner specially made for photographic optics and gently wipe the surface without exercising any pressure. Repeat the procedure if necessary using a new swab. To clean, start at the center of the lens, using a circular motion and working to the edge of the lens for best results.
- c. When the lens is not in use, it should be stored in a cool dry place, however, if this is not possible, a leather case with a silica gel packet will afford the same protection as an aluminum case with polyfoam liner.

YOUR LENS IS A HIGHLY COMPLEX PRECISION OPTICAL INSTRUMENT, INDIVIDUALLY ASSEMBLED BY SPECIALIZED SKILLED CRAFTSMEN, AND WITH PROPER CARE AND MAINTENANCE SHOULD GIVE YOU YEARS OF SATISFYING AND ENJOYABLE PHOTOGRAPHIC RESULTS.



REFLEX MIRROR LENSES
500mm F6.3

- | | |
|------------------|----------------------|
| ① Name Plate | ④ Macro Ratio |
| ② Focus Ring | ⑤ Index for Distance |
| ③ Distance Scale | |

Reflex Mirror Lenses
500mm F6.3

Instruction Booklet

Your new Catadioptric or Reflex Mirror lens is a highly developed computer designed product, using the merits of both reflex optics and refraction optics. This gives you very sharp picture quality with less color aberration, which is considered the most harmful factor in the field of telephoto photography. Each lens comes with interchangeable rear insert filters. Optional filters are exclusively designed for the Reflex Mirror lenses.

1. The proper T-mount adapter is threaded onto the back of the fens.

2. MOUNTING YOUR LENS

The T-mount is similar in design to the standard lens normally purchased with your camera, and is coupled and removed in the same manner.

3. FOCUSING THE LENS

Focusing is accomplished while viewing the subject through the view-finder of your camera and rotating the focusing ring. Since the aperture is preset, you will find under certain light conditions a shadow appearance on the split-image section of your focusing screen. In this case, simply focus on the edges of your subject with the outer center of your fresnel prism.

NOTE: In order to compensate focusing when normal focusing position may differ due to extreme temperature change, the focusing ring has been designed to allow rotation beyond the fixed engraved marks of the distance scale, To avoid error, focusing should always be made while looking through the view-finder.

NOTE: No adjustment of focusing is necessary when taking infrared photography, as is required with normal lenses.

4. LIGHT AND CONTRAST CONTROL

Since the reflex lens is not equipped with a diaphragm system, the use of filters plays an important factor in the control of light and contrast.

5. FILTERS

Normal (IA Skylight): This filter should be used whenever no other filter is necessary.

ND 2X and ND 4X : These filters control the light passage since no diaphragm system is provided in the reflex lens. Exposure factor is 4 times with a ND4X, i.e., the light in-take through the lens is decreased similarly as it, stopping-down a normal lens with an aperture, by 2 stops. NOTE : ND filters reduce light passage only, and the depth of field cannot be changed.

Y52 (Yellow) : This filter is used when taking black and white pictures. It makes a blue background darker. Quite effective when taking shots of Clouds on a blue horizon.

O56 (Orange) : This filter makes Blue or Green color lines darker and, Yellow or Red color lines lighter than seen with the human eye. Quite effective when stronger contrast is desired. Used to express day-time scenery as a night scene, or emphasis and strengthen contrast exceptionally. Also, necessary when taking infrared black and white exposures.

R60 (Red) :

NOTE : In case the subject to be taken indicates too much light or over exposure as indicated by an exposure meter reading, or LED warning signal of the camera, adjustment of the light in-take is controlled by using one of the ND filters. When using a R60 filter with an aperture preferred camera, an aperture adjustment to the camera between +0.5 to +1.0 is required.

6. EXPOSURE OR APERTURE ADJUSTMENT WITH TTL CAMERAS

Since the aperture of the reflex lens cannot be changed, the exposure is controlled entirely upon the shutter-speed being used. The speed-dial is set according to your TTL reading. Both aperture and shutter priority automatic cameras will automatically set the right speed with its auto exposure mechanism, except a few models which it is necessary to operate on a manual function. In aperture priority or manual operation of a camera, appropriate shutter speed must be adjusted using 3 neutral density filter in case of over exposure readings or the camera's LED warning light is activated.

If your camera is a manual TTL system, then simply follow the exposure indicator in the viewfinder by compensating with the shutter-speed. In case of excessive light beyond the shutter speed capability, attach a Neutral Density filter to reduce the overall light passage.

7. CAMERA WITHOUT TTL SYSTEM

When using a camera without a TTL system and filters, except for the normal filter, the exposure must be stopped down as indicated in the following table to the shutter speed indicated by a exposure meter reading, i.e., with the 300mm f5.6 Reflex lens, the setting would be f5.6. If a Y52 filter under daylight conditions is used, the stop-down would be 1. That is, if the appropriate shutter speed is metered as 1/1000 seconds using a single exposure meter with a f stop of 5.6, then, the shutter speed setting must be 1/500 seconds.

FILTER UTILIZATION CHART (Exposure Adjustment)					
		Under Daylight		Under Tungstenlight	
Kind of Filter	Color	Exposure	Shutter Stop-down	Exposure	Shutter Stop-down
			No adjustment		No adjustment
Normal	Clear	1		1	
Y52	Yellow	2	1	1.5	1/2
O56	Orange	2	1	1.5	1/2
R60	Red	6	2	4	2
ND2X	Grey	2	1	2	1
ND4X	Grey	4	2	4	2
ND6X	Grey	8	3	8	3

NOTE: If a 1/2 shutter speed adjustment is indicated, generally to negative film, a full one stop should be taken. When a reversal film is being used, disregard the half-stop setting and use a normal shutter speed.

8. DEPTH OF FIELD

The area in acceptable sharpness in front of, and behind, the subject in focus is called the Depth of Field. The aperture selected and the distance of the subject, as well as, the focal length of a lens determines such depth of field. Because of the longer focal length of your Reflex lens the depth of field is acutely narrow, for example, with a 500mm f6.3 lens, at a distance of 6 feet, the depth of field is only 1/2 inch wide. Therefore, it is recommended to first practice focusing with your lens before taking any serious pictures, especially in close-up photography. It is suggested that a focus magnifier be used to help determine the depth of field sharpness under such extreme conditions.