

DETAILS

FILM

NEGATIVE SIZE—24 x 36mm

FILM—KODAK 135; 20- or 36-exposure

LENS

SCHNEIDER RETINA—XENON—Coated 50mm f/2

LENS OPENINGS—f/2, f/2.8, f/4, f/5.6, f/8,
f/11, f/16

SHUTTER

SYNCHRO-COMPUR—Cocked by film advance lever

SPEEDS—1, 1/2, 1/5, 1/10, 1/25, 1/50, 1/100,
1/250, 1/500 second, and "B"

FLASH—Built-in synchronization for Class F,
M, and Speedlamp

FOCUSING AND VIEWING

COUPLED RANGE FINDER—Superimposed image

VIEW FINDER—Optical, eye-level, combined
with range finder

FOCUSING RANGE—3½ feet to infinity

DOUBLE-EXPOSURE PREVENTION—Automatic

FILM ADVANCE LEVER—Advances film and cocks
shutter with one stroke

CONSTRUCTION

BODY—Die-cast—Black leather covered

TRIPOD SOCKET—Standard American thread

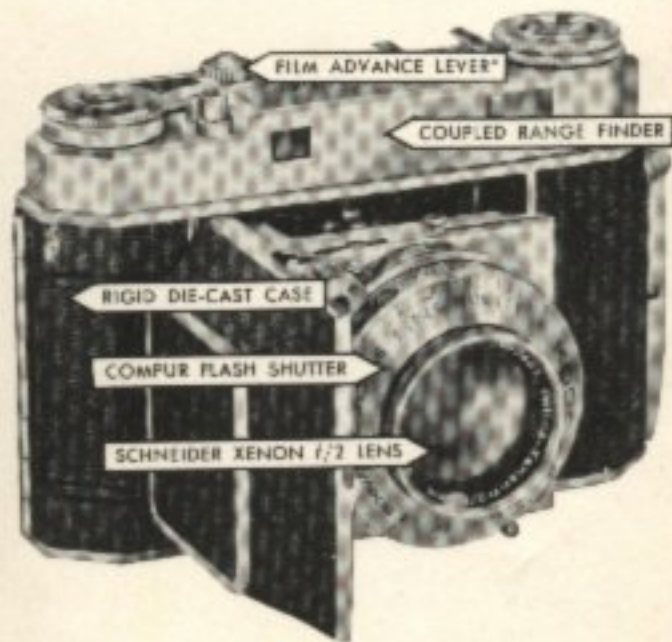
COMBINATION LENS ATTACHMENTS

1¼-inch Kodak Adapter Ring, Series VI; Series
VIA Lens Hood

Kodak Retina Ila Camera

RETINA—XENON f/2 LENS • SYNCHRO-COMPUR SHUTTER





***important:** The film advance lever advances the film and cocks the shutter; it should not be forced. It locks when the counter is set at 1, also when the film has been advanced but not exposed.

SERIAL NUMBER—For positive identification—is located on the accessory clip; keep a record of this number. The prefix "EK" is used to designate those Retina Cameras imported by the Eastman Kodak Company. Be sure to fully describe your camera, including the full serial number with prefix when corresponding about it. Be sure to save the Certificate of Import and Ownership included with this manual.

Kodak Retina Ila Camera

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• To get the most from your camera, take time to get acquainted with it. Follow the directions carefully, practicing with your camera as you go along. This is a precision instrument, never force anything; if something does not work smoothly, review the instructions about its operation.

Before making any important pictures—a trip, some special event, or any pictures expected to prove valuable—you should shoot a roll or two of film and take a few flash pictures. This will

give you practice and will provide a check on your equipment. If you have any questions, your Kodak dealer will always be glad to help you in any way he can.

note: Like any fine lens, this lens should be cleaned with care. To clean the front or back surface, first brush away any grit or dust. Then wipe the surface gently with Kodak Lens Cleaning Paper or a soft, lintless cloth. If moisture is necessary, breathe on the lens or use Kodak Lens Cleaner.

To open the camera

... press the **OPENING BUTTON** and pull down the front until it locks.



To close the camera

... this camera cannot be closed if it is focused for anything but infinity. Be sure the focusing knob is pushed clockwise, as you face the lens, as far as it will go; then squeeze the two **CLOSING BUTTONS** while closing the bed.



the key to good pictures

Your Camera A B C's:

When you press the exposure button to take a picture, light goes through the lens to make an invisible image of the subject on the film.

a

By turning the knurled shutter speed ring, "a," you control the *length of time* the film is exposed to this light.

b

By moving the lever, "b," to one of the settings on the lower scale, you change the *amount* of light reaching the film.

c

By moving the focusing knob, "c," until the double image in the range finder becomes superimposed, you control the *sharpness* of the picture.



The tinted appearance of the lens is due to a special coating which improves the brilliance of black-and-white pictures and the color purity of full-color pictures.

standard settings for simple snapshots

For snapshots of average subjects in bright sunlight, use the following settings:

With Kodachrome Film Daylight Type:

Set "a" (shutter speed) on 50 (1/50 second). Set "b" (lens opening) between $f/5.6$ and $f/8$. Set "c" (focus) to bring the small circle, near the 10-foot mark, to the focusing index for subjects in the 7- to 15-foot range. For subjects 13 feet and beyond, bring the small circle, near the 25-foot mark, to the focusing index.

With Kodak Plus-X Film:

Set "a" (shutter speed) on 50 (1/50 second). Set "b" (lens opening) on 11 ($f/11$). Set "c" (focus) to bring the small circle, near the 10-foot mark, to the focusing index for subjects in the 6- to 25-foot range. For subjects 10 feet and beyond, bring the small circle, near the 25-foot mark, to the focusing index.



a shutter speed

Turn the knurled shutter speed ring to bring the RED DOT opposite the required shutter speed. The following speeds are provided: 1, 1/2, 1/5, 1/10, 1/25,

1/50, 1/100, 1/250, and 1/500 second. "B" exposures can also be made; see page 21.

The shutter is cocked automatically when the film is advanced.

Do not change the shutter setting from 1/250 to 1/500 or vice versa *when the shutter is cocked*.

A tripod or other firm support should be used for speeds slower than 1/25 second.

Note: Never oil the shutter or camera mechanism.

b lens opening

Move the LENS OPENING LEVER across the scale, illustrated on page 8, to regulate the amount of light reaching the film. This lever click stops at each opening. By pressing down on it, the lever is easier to move.



The opening is largest when the lever is set at 2 ($f/2$) and smallest when set at 16 ($f/16$). Each succeeding larger opening lets through twice the light of the one before; for example, $f/8$ lets through twice the light of $f/11$, and $f/11$ lets through twice the light of $f/16$.

The shutter speed and lens opening work together to give the right exposure. Exposure tables are on pages 28 and 29.

c focusing

The range finder of this camera is coupled to the lens. Moving the FOCUSING KNOB until the two images in the range finder coincide focuses the camera.

Carefully look through the view-and-range finder opening and you will see that part

of the picture is clear and part is tinted. When the camera is out of focus, the tinted image is separate from the clear image, forming a double image of the subject. Move the focusing knob until the two images coincide to become a single image. The range finder can be used only on still subjects.

To focus the camera without using the range finder, estimate the distance by eye; then move the focusing knob to bring the proper distance to the FOCUSING INDEX. The numbers on the FOCUSING SCALE represent the camera-to-subject distance in feet. When using infrared film, use the red dot for the index instead of the regular index.

The two small circles on the focusing scale are for the two standard settings described on page 6.



Kodak Films

Use Kodak 135 Film

For beautiful color—use Kodachrome Film—Daylight Type outdoors, Type A with flood or flash, 20 or 36 exposures.

With full-color Kodachrome you can capture the vivid colors of an autumn landscape, of spring flowers, of gaudy carnivals . . . or the gay colors at a children's garden party, a picnic, a cherished holiday . . . or the delicate colors of that infant son or daughter. Yes, with color there are new fields to conquer.

Kodachrome Film is sent to Kodak for processing at no extra cost. It is returned to you as 2 x 2-inch mounted transparencies (unless otherwise specified) which can be viewed by transmitted light, projected as slides, and from which color prints can be made. See your Kodak dealer for *full-color Kodacolor Prints and Enlargements at moderate prices.*

For high-quality enlargements

. . . use Kodak Plus-X Panchromatic Film—fine grain and high resolving power permit high-quality enlargements. An excellent film for general outdoor and well-lighted interior use. 20 or 36 exposures.

For poor light

. . . use Kodak Super-XX Panchromatic Film—very high speed makes this an ideal film to use with artificial light. 20 or 36 exposures.

For fine-grain copying

. . . use Kodak Micro-File Film—an extremely fine-grain, slow, panchromatic film for copying printed matter, maps, documents, etc. 36 exposures.

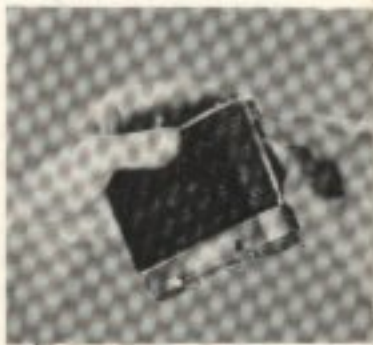


loading

Load the camera in subdued light, never in bright light. Kodak 135 Film is contained in a lighttight magazine. *Rewind the film into this magazine after the exposures have been made and before the camera back is opened.* Various Kodak 135 Films are described on pages 10 and 11.

1. Lift the lock and open the camera back.

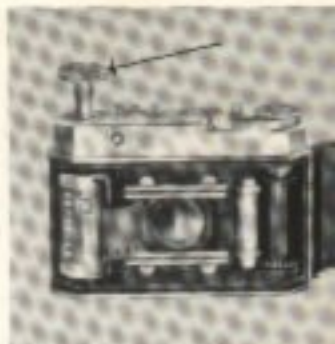
2. Turn the knurled edge of the counter in the direction of the arrow to bring the diamond near 36 to the index mark for a 36-exposure magazine. Bring the diamond near 20 to the index mark for a 20-exposure magazine. The counter will move a mark every time the film is advanced. It will always show the number of exposures REMAINING on the film.



3. Draw out the film REWIND KNOB as far as it will go. Insert the film magazine in the recess under the rewind knob. The end of the magazine containing the crosspiece goes toward the rewind knob. Push in the rewind knob and turn it to engage the slot with the crosspiece in the magazine.

4. Insert the end of the film leader in the slot of the take-up reel. Do not try to remove this reel from the camera. Give the flange of the reel a turn with the thumb until the film is wrapped once around the reel.

5. Continue to turn the flange of the reel with the thumb, until the first or second perforation of the edge of the film toward the top of the camera is engaged by one of the sprocket teeth. The teeth of the sprockets must fit in the holes in the



film. Close and lock the camera back.

6. Press and release the film lever button (arrow in 5) and operate the film lever 3 times. Be sure to make a complete stroke with the lever; then let it fly back to its original position. This brings the first frame of film into place and cocks the shutter for the first exposure. It also brings the 36 or the 20 on the film counter into position.

7. Rotate the film-type indicator with the ball of the thumb to bring the name of the film opposite the index.



note: When the figure 1 in the film counter reaches the index, the film lever will lock; no more pictures can be made until the film is rewound into the magazine (see page 17) and the camera is reloaded. If the film lever locks at any time, *do not force it* but check the counter to see if it is set at 1. Move the counter off 1 to release the film winding mechanism.

holding the camera

Hold the camera as shown below. Either position is comfortable and practical; you can hold the camera remarkably steady while you squeeze the exposure button to take the picture.

using the view finder

Steady the camera against your face. Focus the camera as described on page 8. Place the rear of the finder close enough to the eye so that the entire front frame can be seen. Compose the picture, moving the camera and your head together.



taking the picture

1. Make the lens and shutter settings.

2. Cock the shutter and advance the film* with a single full stroke of the film advance lever.



3. Focus and compose the picture in the finder.

4. Make the exposure. Hold the camera steady; it's a good idea to hold your breath while you s-q-u-e-e-z-e the exposure button.

*When the exposure button is depressed, the film lever is released. It is necessary to press and release the film lever button *only* when you wish to advance film without having pressed the exposure button (as in loading).

After the 20th or 36th exposure has been made, and the counter is at 1, the film advance lever will lock; rewind the film and unload the camera (page 17). *Do not open the back of the camera until the film has been rewound into the film magazine, or the film will be fogged.*

unloading

When the last exposure has been made, the counter will be at 1 and the film lever will lock. Pull out the rewind knob halfway, press the REWIND BUTTON as far as it will go, and at the same time start turning the rewind knob in the direction of the arrow. Continue turning the rewind knob until the rewind button stops turning. The film (except for an inch or two of leader strip) is now back in the magazine. Now open the back; pull out the rewind knob as far as it will go; remove the magazine.

It's a good idea to get your exposed film processed promptly. The Kodak Day-Load Tank or the Kodacraft Miniature Roll-Film Tank make it easy to develop your own black-and-white film.



flash pictures

... are easy and lots of fun to make with this camera. Flashing of the lamp is controlled by the synchro feature of the shutter. Class F or M flash lamps can be used as well as speedlamps. The Kodak Flashholder Model B and the Kodak B-C Flashpack, or two fresh, size C *photoflash* batteries are all the extra equipment you need for flash shots. If

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photoflash batteries are not available, flash-light batteries can be used. The batteries should test at least 5 amperes.

The flashholder is attached by screwing the thumbscrew on the standard bracket into the tripod socket of your camera. Be sure to slip the Kodak Flashpost ADAPTER, supplied with your camera, on the FLASH POST before attempting to connect the flashholder cord to the flash post.

Using Class F Lamps*, such as SM or SF

... set the synchronizer SELECTOR on "X," set the shutter speed at any speed up to and including 1/100, cock the shutter with the film advance lever, and snap the picture.

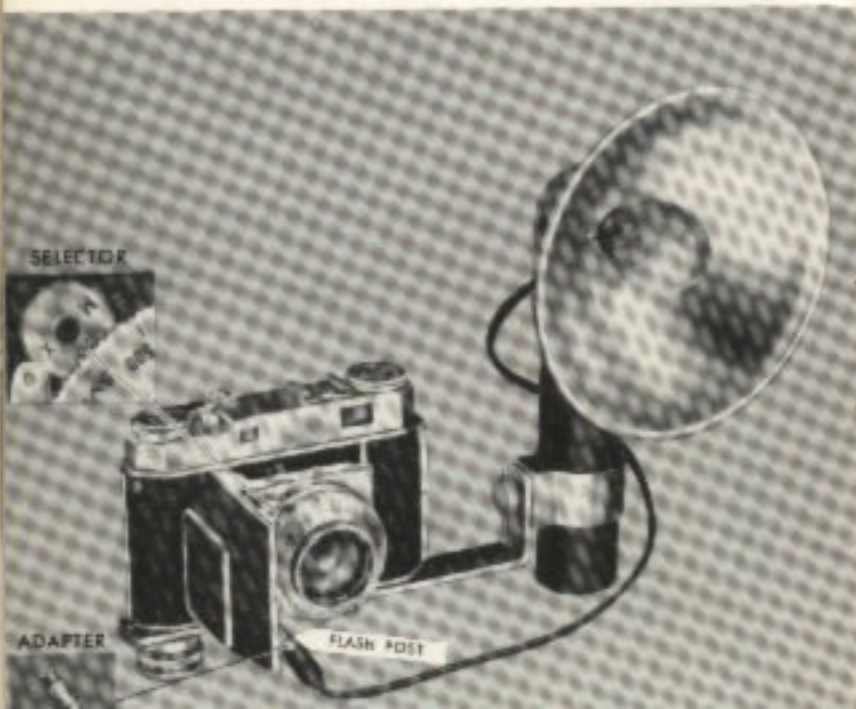
Using Class M Lamps*, such as No. 5 or No. 25

... set the synchronizer SELECTOR on "M," select any shutter speed up to and including 1/250, cock the shutter, and snap the picture.

Using Speedlamps

... connect a Kodatron Speedlamp (or similar equipment with no lag in the trip circuit) to the flash post, using the adapter. 19

*Be sure the bottom of the lamp base is clean and bright before inserting the lamp in the flashholder. If the contact point is tarnished, rub it on a rough surface such as emery paper or a heavy rubbing cloth.



Set the synchronizer selector on "X," select a shutter speed, cock the shutter, and snap the picture.

The light will flash when the shutter blades are open at all shutter speeds.

note: Do not use units flashed by means of heavy-duty relays or solenoids. Such units may completely destroy the shutter contacts.

Supplementary Flash—Outdoors

... blue flash bulbs are used with Daylight Type color films to reduce excessive contrast with back- or side-lighted subjects in bright sun. With selector on M use No. 5B or No. 25B flash lamps. A lamp-to-subject distance of 8½ feet gives good contrast. Use the basic exposure for subjects in bright sunlight.

Flash exposure data are given on page 28, and on the reflector of the Kodak Flashholder Model B.

caution: Since lamps may shatter when flashed, the use of a Kodak 2-way Flashguard or other shield over the reflector is recommended. Do not flash the lamps in an explosive atmosphere.

Do not insert flash lamps in the reflector if the shutter is open—the lamp will flash and a serious burn may result.

time exposures

... enable you to take pictures at night outdoors or indoors of still subjects, using the existing light. Night pictures can add variety to your picture collection.

The "B" setting enables you to keep the shutter open for as long as required. Place the camera on a tripod or other firm support. *Both camera and subject must be still during the exposure.*

To make a "B" exposure, the focus and lens opening having been set, set the shutter on

"B," cock the shutter by operating the film advance lever, press the exposure button, hold it down for the exposure time required, and release the button to close the shutter. The Kodak TBI Metal Cable Release No. 2, available from your Kodak dealer, can be used to hold the shutter open for as long as required.





depth of field

Objects some distance in front of and beyond the subject focused on will be sharp. This depth of field varies with the lens opening used; the smaller the lens opening, the greater the range of sharpness.

Your camera is equipped with a depth-of-field scale so that you can read this range of sharpness easily before you take each picture. The focusing scale combined with the lens opening numbers engraved on the shutter barrel each side of the focusing index comprise the depth-of-field scale.

The following example shows you how to read this scale: Subject is 12 feet away, exposure calls for a lens opening of $f/8$.

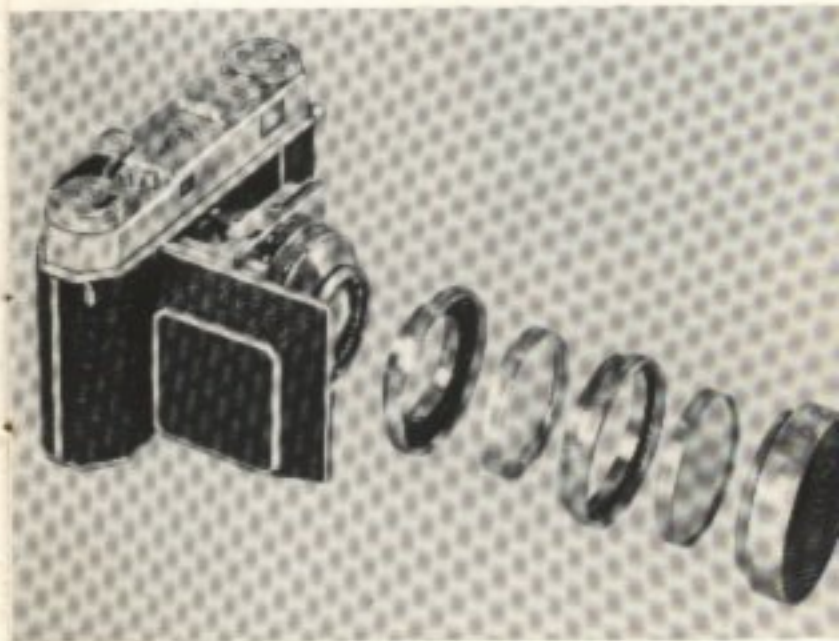
Set the focusing scale with 12 opposite the focusing index. Look for the number 8 on each side of the index. The one on the right is opposite 25 and the one on the left is near 8. Therefore, all objects between about 8 and 25 feet will be sharp.

Kodak combination lens attachments

Series VI with the Series VIA Lens Hood are used with this camera. The VIA Lens Hood must be used to allow clearance of the camera bed.

All items fit in the 1½-inch Kodak Adapter Ring which in turn slips over the lens mount.

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To assemble a filter, Portra Lens, or Kodak Close-Up Diffusion Disk in the ring, unscrew and remove the insert; then place the item in the ring; replace the insert. The Kodak Lens Hood can be used in place of the insert. If a Portra Lens and a filter or a Pola-Screen are to be used together, a Kodak Retaining Ring is also necessary.

The Kodak Wratten Filters K2, A, X1, and G are used for darkening the sky and are used with panchromatic films; *do not use these filters with color film.*

Filters for Kodachrome Film

Kodachrome pictures made in open shade under a clear blue sky, or on overcast or hazy days will be improved if a *Kodak Sky-light Filter* is used.

If the *Kodak Daylight Filter for Kodak Type A Color Films* is used, Type A film can be used in daylight.

For flash photography with Kodachrome Film, Kodak Light Balancing Filters No. 81C with No. 5 flash lamps and No. 81D with No. 25 flash lamps are recommended.

Kodaslide Projectors

— are made in two outstanding models: the low-priced but very efficient Kodaslide Merit Projector, and the power-cooled Kodaslide Projector Master Model. Both models have precise optical systems, and Lumenized projection lenses, to provide brilliant pictures.



Kodak Ektalux Flashholder

—is adapted to all types of flash picture-taking. The built-in battery-condenser system assures dependable lamp-firing and longer battery life. The Ektalux uses either midget or medium-base lamps and offers accessories that greatly expand the versatility of flash work with your camera.

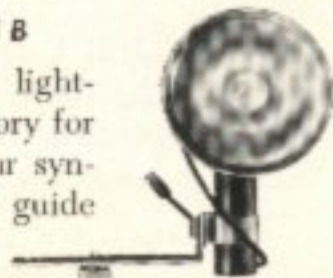


Kodaslide Table Viewer 4X and Model A Series 2

... These compact, lightweight, efficient viewers provide everything necessary for projecting your slides in a normally lighted room. They are easy to carry and easy to use. Just plug them into the electric line and feed the slides through them.

Kodak Flashholder Model B

... an inexpensive lightweight, efficient accessory for flash pictures with your synchro shutter. Exposure guide



numbers are shown on the back of the reflector. An extension unit is available with extension cord and adjustable clamp-on bracket for multiple flash.

Kodak Fluorolite Enlarger

... for those who appreciate fine equipment and who take pride in turning out first-quality enlargements. Features fluorescent, integrated illumination.



Kodak Auto-Release

... A delayed-action device that trips the shutter about 10 seconds after it is set. It is used with the Kodak Metal Cable Release No. 5 or a TBI No. 2.

EASTMAN KODAK COMPANY

Rochester 4, New York

EXPOSURE TABLES

Flash—The exposure guide numbers in the table apply to lamps in a 4- to 5-inch satin-finished reflector, such as that of the Kodak Flashholder Model B.

To determine the lens opening to use, divide the guide number in the table by the camera-to-subject distance. For example, to find the lens opening for a subject 5 feet away for Kodachrome Film Type A, SM lamp, and a shutter setting of 1/100, divide the guide number (40) by the distance (5) to get 8 (f/8).

Flash Lamp	SM or SF		No. 5 or No. 25			
Shutter Speed	Open Flash†	1/100	Open Flash†	1/50	1/100	1/250
Kodachrome Type A*	45	40	70	60	55	35
Plus-X	75	65	140	110	100	75
Super-XX	110	95	200	160	140	100

*With Kodachrome Film Type A and a No. 5 lamp, use a Kodak Light Balancing Filter No. 81C; with a No. 25 lamp, use a No. 81D Filter. Warmer tones will result.

†1/25 or slower, or "B" (no bright lights in camera's view).

Ready-reference table for average indoor camera-to-subject distances, with the shutter set at 1/25 second, and using Kodachrome Film Type A.

No. 5 or No. 25 Flash Lamps

f/2	f/2.8	f/4	f/5.6	f/8	f/11	f/16
35 ft	25 ft	17 ft	12 ft	9 ft	6½ ft	4½ ft

SM or SF Flash Lamps

f/2	f/2.8	f/4	f/5.6	f/8	f/11	f/16
22 ft	16 ft	11 ft	8 ft	5½ ft	4 ft	2¾ ft

Flood—Kodachrome Film Type A with two No. 2 Flood Lamps in Kodak Vari-Beam Lights set at STILL and equidistant from subject.

Shutter Speed	f/2	f/2.8	f/4	f/5.6
1/50	7*	4*	—	—
1/25	9½*	7*	4*	—
1/10	15*	11*	7½*	5*
1/5	—	15*	11*	7½*

*Lamp-to-subject distance in feet.

Kodak Super-XX Film used in light-colored rooms with two No. 2 Flood Lamps in Kodak Vari-Beam Lights set at STILL. Double the Exposure for Kodak Plus-X Film.

Place one light beside the camera about eye level (camera light); on the other side place the second light at a 45° angle to camera-subject axis but higher (side light).

Shutter Speed		f/2	f/2.8	f/4	f/5.6
1/500	Side Light Camera Light	3½ 6	— —	— —	— —
1/250	Side Light Camera Light	6 8½	3½ 6	— —	— —
1/100	Side Light Camera Light	9½ 14	7 10	4 7	— —
1/50	Side Light Camera Light	14 20	9½ 14	7 10	4 7
1/25	Side Light Camera Light	— —	14 20	9½ 14	7 10