

Kodak *Retinette*



and how to use it

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KODAK AG STUTTGART GERMANY

You will Find an Invaluable Friend

and constant companion in your RETINETTE miniature camera. With its small size, handy use, and attractive appearance you can easily take it with you wherever you want to capture and record your experiences.

The following features of the RETINETTE ensure of technically perfect results:

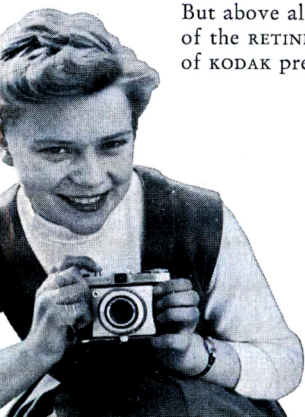
Three-element REOMAR $f/3.5$ lens of sharp definition; coated specially for colour photography • Compur-Rapid shutter with 10 speeds, light value settings, self-timer, and flash contact • Rapid winder controlling three

operations in one • Large clear finder •

But above all, the most distinctive feature of the RETINETTE is the famous perfection of KODAK precision workmanship.

However, as you will want to produce pictorially as well as technically good photographs, you must get to know the few operations of handling the RETINETTE. Once you are thoroughly familiar with it you can turn your attention to creating pictures.

KODAK AG. STUTTGART



FIRST PRACTISE - THEN SHOOT

Please devote a few minutes of your time to this instruction booklet.

When reading the following sections you will find it very helpful to practise the operations described on your camera - without a film.

To find the different controls quickly, keep the illustration on pages 19-21 opened up while reading the booklet.

Even your first shots will be successful if you follow carefully these three sections of the instructions:

A - Loading the camera

(Page 11)

B - Snapshot settings

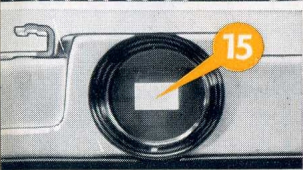
(Page 8)

C - Viewing and releasing

(Page 4)



**WITH THE RETINETTE YOU WILL SOON FIND
PICTURE TAKING IS AS EASY AS ABC**



HOLDING THE CAMERA

The carefully designed shape of the RETINETTE appreciably contributes to a safe grip. Hold the camera firmly, but not cramped. The tip of your index finger should rest lightly on the release button (16). Preferably support the elbows against your body. Try out a few holds for horizontal and vertical views to find the one that suits you best. The illustrations show two examples.

THE FINDER

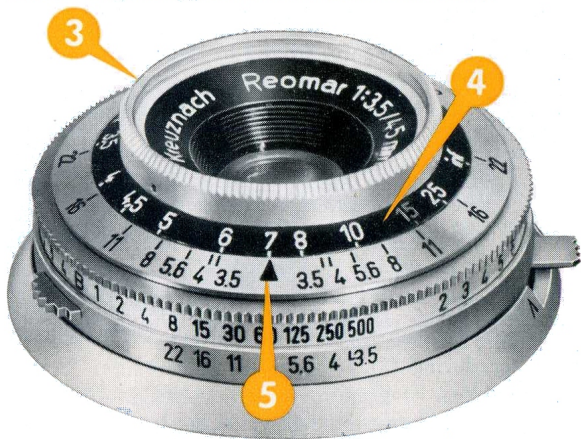
On looking through the viewfinder eyepiece (15) you will see a clear and distinct view of the subject – but you must hold the eye close to the finder eyepiece (15). Then you can also be sure that you see the correct field of view, and can judge the effect and make any adjustments you wish before taking the picture.

Even if you wear spectacles you can easily see the whole subject area. But if you have faulty vision (other than astigmatism) and prefer to use the finder without spectacles, you can buy suitable correction lenses to screw into the eyepiece (15).

SETTING THE DISTANCE

You can determine the distance of the subject in front of the camera by guesswork, by pacing, or by measuring it.

Look up the appropriate value on the black distance scale (4) and turn the focusing ring (3) to set the distance figure opposite the red index mark (5).



With a little practice you will easily be able to estimate the required distance correctly. If you haven't yet sufficient experience in estimating, pace the distances, taking one pace as equal to about $2\frac{3}{4}$ feet.

NOTE: *Measure all distances from the subject to the plane of the film in the camera. This corresponds approximately to the upper rear edge of the chromium plated top of the body.*

Depth of field is explained on page 15.

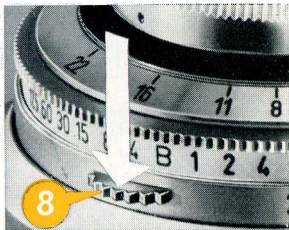
LIGHT VALUES

Setting the exposure is particularly easy on the Compur-Rapid shutter with light values and coupled aperture and speed controls.

First of all find the light value required for the subject from the light value table (page 22) or determine it with an exposure meter (e. g. the KODALUX L).

The red scale of figures from 2 to 18 at the side is the **light value scale**. Note, however, that only settings from $3\frac{1}{2}$ to 18 are possible.

Now push the lever (8) in the direction of the arrow (see illustration) and move it sideways to set the red dot (12a) to the required light value. If this is not possible, turn the shutter speed ring (7) accordingly.



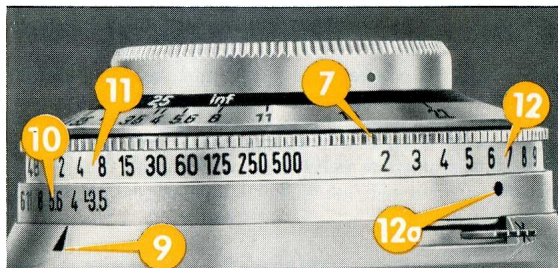
When you have set the light value, for instance 10, you can read off one of the following aperture-speed combinations against the triangle ▲ index mark (9):

Shutter speed (second)	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{15}$	$\frac{1}{30}$	$\frac{1}{60}$
Aperture (stop)	f/ 22	16	11	8	5.6	4

If the particular combination opposite the index mark does not suit you, set the combination you want by rotating the shutter speed ring (7). You will notice that the movement clicks into position at each setting. This guarantees exact shutter speeds.

The black figures on the shutter speed scale (11) always stand for fractions of a second. For instance, "2" is $\frac{1}{2}$ second, "15" is $\frac{1}{15}$ second, or "125" means $\frac{1}{125}$ second.

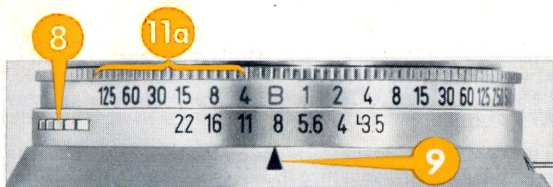
The aperture figures (10) indicate the relative lens opening. At an aperture $f/3.5$ (the small black line) you are utilizing the full light-gathering power of the lens. The $f/3.5$ setting corresponds to the largest aperture, $f/22$ to the smallest.



With fast moving subjects you have to set a suitably short shutter time; if the subject calls for appreciable depth of field, use a small aperture (large f /number). When you set the shutter speed, the corresponding aperture automatically sets itself; conversely, setting the aperture automatically adjusts the shutter.

Should the subject need a longer time than 1 second, read off the correct figure in full seconds on the green scale (11a) opposite the aperture numbers.

The green "B" is for time exposures; on pressing the release button (16) the shutter opens and remains open



until you let go of the button again. Always use a tripod for time exposures (see page 9).

For instance, if you read off a time of 15 seconds for $f/22$ with a light value of 5, you have to set the shutter on "B" and the aperture number 22 against the ▲ index mark (9) before exposing for 15 seconds.

If you want to set apertures and speeds without reference to the light value, adjust the shutter speed (11) first, and then the aperture (10). If you do it the other way round, the aperture-speed coupling will change the aperture setting when you adjust the shutter.

For the self-timer and flash synchronization see page 16.

THE SNAPSHOT SETTING

The best pictures are often candid snapshots. Frequently however the situation calls for immediate action; there is no time for deliberating or for camera adjustments. In such cases the snapshot setting is useful:

- Set the distance (4) to the red figure 15,*
- Light value to at least 11,*
- Shutter speed to at least $\frac{1}{60}$ second.*

For hand-held snapshots use at least $\frac{1}{60}$ second or faster. To obtain adequate depth of field an aperture of $f/5.6$ or smaller (higher f /numbers) is necessary. $\frac{1}{60}$ second at $f/5.6$ corresponds to a light value of 11. For snapshots subjects the light must therefore be adequate for a light value of at least 11.

A distance setting of 15 feet (marked in red) and light value 11 yields a sharp zone from 9 to 50 feet. At higher light values conditions are still better as you can use a smaller aperture (larger number) and thus have a greater depth of field (see page 15).



THE RAPID WINDING LEVER

The rapid winding lever is one of the outstanding features of the RETINETTE.

When you pull out the rapid winder (23) as far as it will go the following three operations take place simultaneously: 1. You tension the shutter. 2. You transport the film by one frame. 3. You advance the film counter (page 11). On releasing the lever it flies back into its rest position.

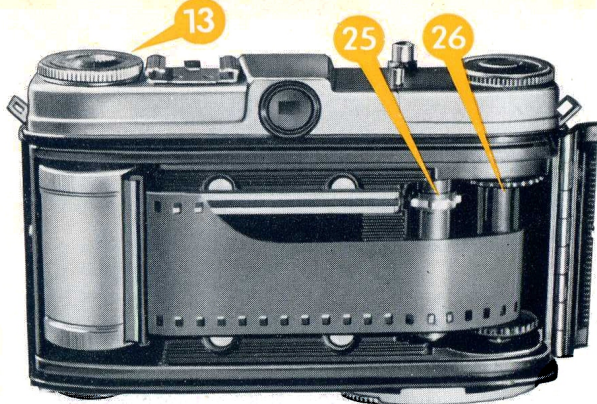
RELEASING THE SHUTTER

The shutter release of the RETINETTE has the great advantage of being really smooth in action. That avoids jerking the camera, and thus camera shake.

Make a habit of tensioning the shutter again immediately you have made an exposure, so that the camera is always ready to shoot. Keeping the shutter tensioned even for long periods does not harm it in any way.

USING A TRIPOD

For exposures with shutter speeds slower than $\frac{1}{30}$ second, the use of a tripod and cable release is advisable. The cable release screws into the socket provided for the purpose in the release button (16). The tripod bush (20) serves for mounting the camera on the tripod. To ensure that the camera is supported below its centre of gravity, use the RETINA camera platform.

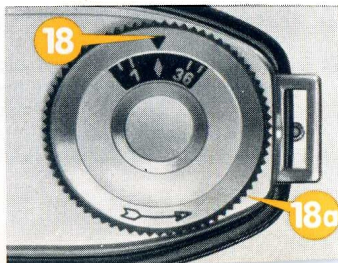
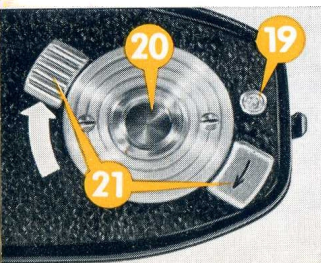


LOADING THE CAMERA

The RETINETTE will take all commercially available black-and-white and colour films (e. g. KODACHROME) in miniature film cassettes of 20 or 36 exposures 24×36 mm.

OPENING THE CAMERA BACK

The button (19) which opens the camera back (27) is protected by safety latch (21) against unintentional opening. Pushing the latch (21) in the direction of the arrow expose the button (19). Press that button to open the back (27).



INSERTING THE FILM

NOTE: *Never load or unload the film in brilliant sunshine.*

Before inserting the cassette into the chamber first push the trimmed film leader into the slit of the built-in take-up spool (26) until it is just visible on the other side. Now pull out the rewind knob (13) as far as it will go, draw the film across the film track, and place the cassette into the cassette chamber. The cassette is quite easy to insert, provided you hold it straight.

Finally push back the rewind knob (13) again, turning it at the same time in the direction of the arrow.

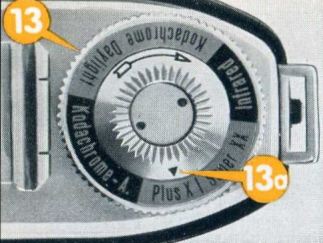
NOTE:

1. *Make sure that the teeth of the transport sprocket engage the film perforations at both sides.*
2. *The film must lie flat and taut on the film track (if necessary wind up a little film on the take-up spool [26] by turning it).*

Now close the camera back (27), pressing it against the body until the lock engages.

SETTING THE FILM COUNTER

If you have loaded a 36-exposure film, set the film counter (18) by turning the black milled ring (18a) in the direction of the arrow to bring the ▼ index mark opposite the diamond ♦ mark (between Nos. 36 and 1). For a 20-exposure film set the counter to the diamond ♦ mark near No. 23.



Before you can take the first picture, the film must be advanced three times. Proceed as follow:

After setting the ♦ index mark work the rapid winder and then depress the film release button (17). Without releasing the shutter you can now advance the film a second time. Advance for a third time in the same way; the triangle mark will now point to No. 36 or 20 respectively, and you are ready for the first exposure.

When the shutter is tensioned, the film counter (18) always indicates the number of exposures still available.

NOTE: While advancing the film check that the rewind knob (13) rotates against the direction of the arrow engraved on it. This occurs only if the film is still tightly wound up on its spool in the cassette. Otherwise turn the rewind knob (13) in the direction of the arrow until you feel a slight resistance.

THE FILM INDICATOR

The film indicator serves to remind you all the time what kind of film you have loaded into the camera.

To set the film indicator, hold the rewind knob (13) firmly and turn the inner milled ring with your finger tip until the ▼ mark (13a) points to type of the film in the camera.

UNLOADING THE CAMERA

When you have finished the 36 or 20 exposures, the film counter (18) points to No. 1, indicating that the whole film is exposed.

Before the film can be removed from the camera it must be rewound into its cassette.

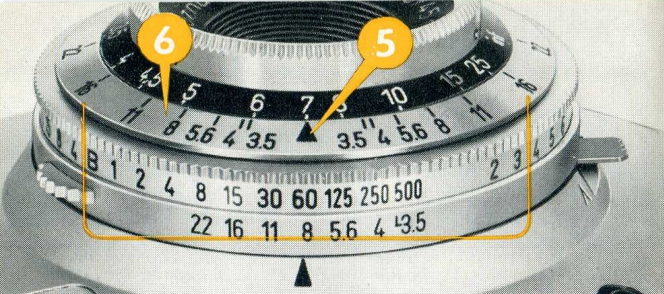
Proceed as follows: Depress the reversing button (24) and turn the rewind knob (13) in the direction of the arrow. At the same time watch the rotation of the reversing button (24) by observing the black dot near its edge. When the reversing button (24) ceases to rotate, the whole length of the film is rewound into its cassette. Now you only have to open the camera back and pull out the rewind knob (13); you can then easily take out the cassette.

UNLOADING AND LOADING PARTLY EXPOSED FILMS

If you want to change a partly exposed film (e. g. to change from black-and-white to KODACHROME) rewind the film into its cassette as described above.

Be careful not to rewind the trimmed film leader into the cassette as well [stop rewinding as soon as the reversing button (24) stops rotating]. Remember to make a note on the film leader of the number of frames you have exposed, as read off the film counter.

When reloading the partly exposed film proceed as described on page 11. Set the film counter again to the diamond ♦ mark before No. 36 or No. 20 – according to the length of the film. After closing the camera back advance the film by alternately working the rapid winder (23) and pressing the film release button (17). On no account press the shutter release (16)! Carry on until the film counter indicates the same number at which you originally unloaded the film. To be on the safe side, advance the film by an extra frame.

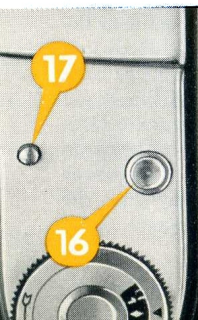


THE FILM RELEASE BUTTON

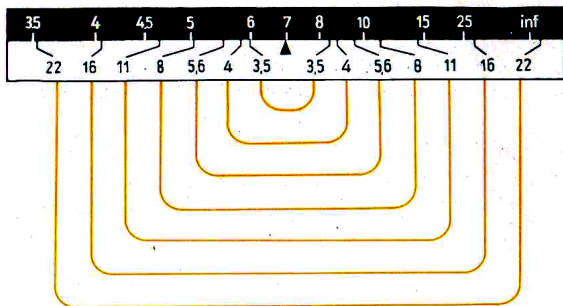
We have already seen one use of the film release button (17) when inserting the film. In addition it can serve to clear blockages of the mechanism which may occur for one of the following reasons:

1. When practising manipulation of the camera controls it may happen that you accidentally work the rapid winding lever (23) while the self-timer is running down. In that case you can no longer press the shutter release (16) which is thus automatically locked. Pressing the film release (17) clears this lock.

2. Apart from that you may also find at the end of a film that the rapid winding lever (23) stops half-way, and you cannot put out fully. On pressing the film release button (17) the rapid winder will fly back into its rest position.



NOTE: *Always press the film release button (17) if the shutter or film transport should jam or be blocked. Never attempt to overcome any resistance by force.*



DEPTH OF FIELD

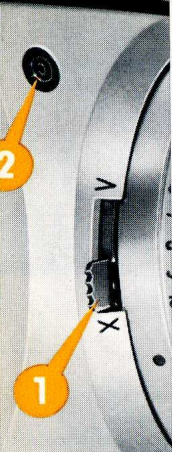
The lens reproduces sharply not only that part of the subject on which it is actually focused, but also a certain zone in front and behind. This zone is called the depth of field. Its extent depends both on the aperture used and on the distance setting. In other words:

The depth of field increases the more you stop down the lens, and also the farther the subject is from the camera.

To show instantly the correct depth of field for any aperture and distance, a depth of field scale (6) is arranged symmetrically around the distance index (5).

Suppose you have set the aperture to $f/11$ and the distance to 7 feet. This is how you read off the depth of field: To the left of the red distance index (5) the figure 11 is opposite about $4\frac{3}{4}$ feet, and to the right it is opposite about 15 feet. This tells you that with a setting of 7 feet and aperture $f/11$ you have a depth of field zone from $4\frac{3}{4}$ to 15 feet within which everything will be sharp on the picture.

The diagram (above) should make the connection between distance and aperture still clearer. The coloured lines shows the depth of field for each aperture at a distance setting of 7 feet.



THE BUILT-IN SELF-TIMER

This device permits automatic release of the shutter. You can therefore include yourself in the shot.

To tension the mechanism push the green lever (1) towards V as far as it will go.

NOTE: You can only move the lever (1) to V if you have tensioned the shutter by working the rapid winder. Never use force.

The delay is about 10 seconds. In other words, on pressing the release button (16) the shutter automatically releases itself after about 10 seconds.

The camera must be firmly supported (e. g. on a tripod). All necessary settings must be carried out before releasing. The self-timer is suitable for instantaneous shots at all speeds from 1 to $\frac{1}{500}$ second as well as for flash shots.

FLASH

The shutter of the RETINETTE is synchronized for flash photography (X-synchronization). It is suitable for use with all available flash units (e. g. the KODABLITZ) as well as for electronic flash.

To take a flash picture, get the flash unit ready, and push the plug from the unit into the flash socket (2) on the camera. Pressing the release button (16) then automatically fires the flash by closing the circuit in the shutter.

For shots with flash bulbs (in a flash holder) set the shutter to $\frac{1}{30}$ second. For shots with electronic flash you can use any instantaneous speed up to $\frac{1}{500}$ second.

The aperture to be used can be obtained from the guide number (usually stated on the flash bulb packet) and the subject-flash distance by the following equation:

$$\text{Aperture} = \text{Guide number} \div \text{Distance}$$

For instance, if the guide number is 120 and you are 15 feet from the subject, $120 \div 15 = 8$. For a correctly exposed flash shot you therefore set the aperture to $f/8$.

DOUBLE EXPOSURES

The double exposure lock of the RETINETTE prevents accidental double exposures. However, if you want to make intentional double exposures for special pictures, proceed as follows.

Before making the first of the two exposures, turn the rewind knob (13) in the direction of the arrow until you feel a slight resistance. After exposing the first shot, press in the reversing button (24) and at the same time work the rapid winding lever (23). (Preferably hold the rewind knob (13) too.) This tensions the shutter for the next shot without advancing the film. Now you can make the second exposure.

CARE OF THE RETINETTE

The mechanism of the RETINETTE requires no special attention. Merely clean out the film chamber and film track with a soft brush after unloading, to remove dust and any fragments of film.

If the lens is dusty, clean it only with a soft brush. Avoid finger marks at all costs; but if they do arise remove them with a clean soft linen rag.

LIGHT VALUE CORRECTION with the use of filters

Kodak Filter		Factor	Reduce Light Value Setting by
Light Yellow	F I	$1\frac{1}{2} \times$	$\frac{1}{2}$
Medium Yellow	F II	$2 \times$	1
Yellow-green	F III	$2 \times$	1
Orange	F IV	$3 \times$	$1\frac{1}{2}$
Red	F V	$7 \times$	3
Blue	F VI	$2\frac{1}{2} \times$	$1-1\frac{1}{2}$
KODACHROME Daylight Filter		$1\frac{1}{2} \times$	$\frac{1}{2}$
KODACHROME Photoflood Filter		$4 \times$	2
Polarizing Screen		$2\frac{1}{2} \times$	$1-1\frac{1}{2}$

MORE SCOPE WITH ACCESSORIES

You can appreciably increase the versatility of your RETINETTE miniature camera by use suitable accessories.

The lens hood increases the brilliance of your pictures by screening off disturbing stray light. It is indispensable for against-the-light and artificial light shots. Expert photographers use a lens hood with all their exposures.

KODAK Colour Filters are available in a range of colours to correct the tones or create special effects in black-and-white shots.

KODACHROME filters permit the use of KODACHROME Daylight film in artificial light and vice-versa.

The Polarizing filter eliminate reflections from shiny surfaces.

The diffusion disk gives contrasty subjects a soft luminous effect by spreading brilliant highlights. It is specially suitable for portraits and against-the-light subjects.

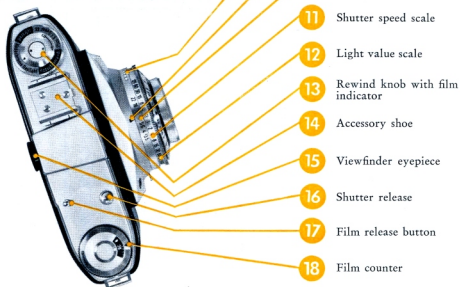
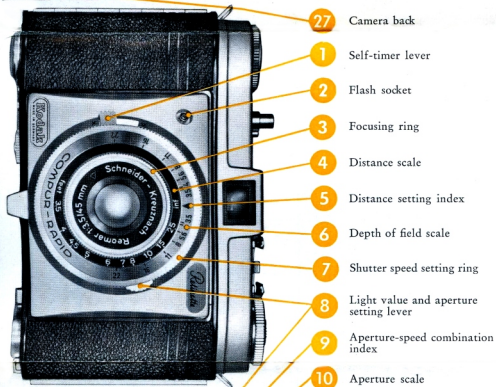
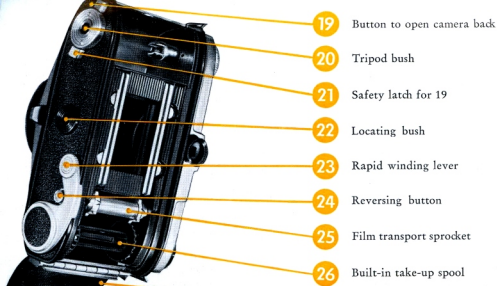
The supplementary N-lenses with the close-up rangefinder extend the scope of the RETINETTE to very near subjects. The close-up rangefinder shows the exact field of view automatically corrected for parallax, and establishes the precise subject distance.

The frame finder model b facilitates viewing of fast-moving subjects (e. g. sports shots). It incorporates parallax compensation down to a subject distance of 1 foot, and is therefore also suitable for close-ups with the supplementary N-lenses.

The KODALUX L is a photoelectric exposure meter with a wide measuring range. It is suitable for incident light as well as reflected light readings, and is almost indispensable for shots on colour film.









The KODABLITZ, an efficient capacitor flash unit, turns your RETINETTE into an independent flash camera. It yields an uniform soft flood of light. For additional illumination of certain subject up to three extension flash holders can be connected up.

With the outstanding KODACHROME reversal colour film you can take marvellously live colour pictures. Apart from its unsurpassed colour quality, a special feature of KODACHROME film is that the price includes not only processing and post-free return, but also individual mounting in transparency frames.



LIGHT VALUE TABLE

This table of light values is valid for the months from May to August between 10 a. m. and 4 p. m. The light values should be decreased by 1 for the months of March, April, September and October or when you take pictures between 9 and 10 a. m. or 4 and 6 p. m. Use two values lower for the winter months from November to February.

Features of the Subject		ASA Index	Film Speed ° BS	Light Values for *			
				Brilliant Sun Clear sky, sharp shadows	Hazy Sun with indistinct shadows	Cloudy Bright No sun, no shadows	Cloudy Dark No sun, shadows
	Brilliant Subjects. Distant views without heavy foreground, light-coloured buildings, figures in mountains and at seaside, all light-coloured subjects.	12 25 50 100	22 25 28 31	 12 13 14 15	 11 12 13 14	 10 11 12 13	 9 10 11 12
	Average Subjects. People and groups out of doors, buildings and garden scenes (not in the shade), subjects with equal areas of bright and dark.	12 25 50 100	22 25 28 31	11.5 12.5 13 14	10 11 12 13	9 10 11 12	8 9 10 11
	Dark Subjects. People in dark clothes, foliage, deep-coloured flowers, dark animals and buildings.	12 25 50 100	22 25 28 31	10 11 12 13	9 10 11 12	8 9 10 11	7 8 9 10
	Subjects in Shadow, but largely lit by the open sky. The smaller the sky area illuminating the subject, the lower the light value required.	12 25 50 100	22 25 28 31	8-8.5 9-9.5 10-7.5 11-8.5	7-4.5 8-5.5 9-6.5 10-7.5	6-3.5 7-4.5 8-5.5 9-6.5	5-2.5 6-3.5 7-4.5 8-5.5

* These values apply to front lighting. For side lighting reduce light value by 1/2, for back lighting by 1.

 Black-and-white film

 Colour film