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In the event of damage send your instrument to the Repair Service Division of the Weston Electrical Instrument Corp., Newark, N. J. Please do not include carrying case or instruction book with meter.

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INSTRUCTION BOOK

for

Weston Model 819 Ciné Exposure Meter

Weston Electrical Instrument Corp.
Newark, N. J.

WESTON

CINÉ EXPOSURE METER

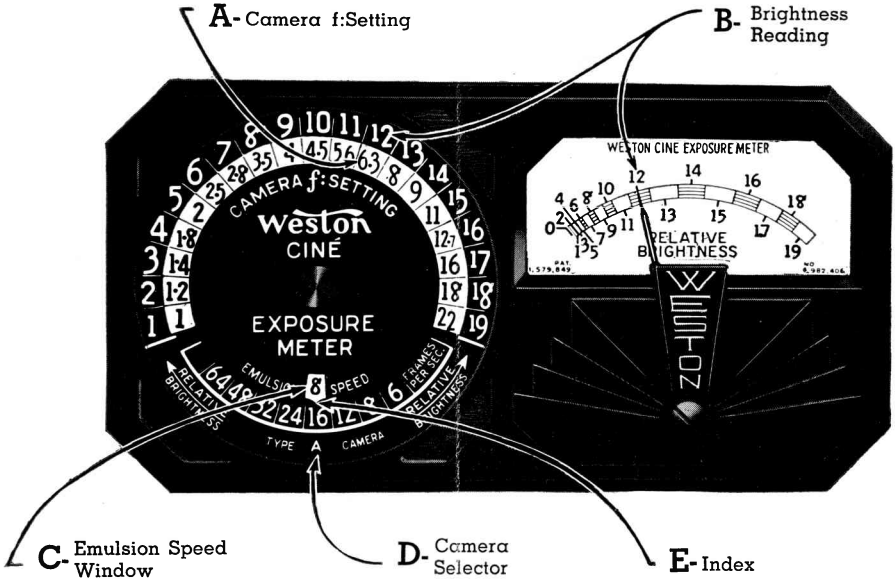
Instruction Book

for

MODEL 819

Weston Electrical Instrument Corp.
Newark, N. J., U. S. A.

OPERATING PARTS OF YOUR WESTON CINÉ EXPOSURE METER



TYPE "A" CAMERAS

Agfa Model B
De Vry
Eastman (all models)
Filmo-all 70's Reg.
Filmo 8 mm.
Filmo 121
Paragon
Univex
Victor (all models)
Zeiss Kinamo S-10-16
All other cameras have a 170° shutter

TYPE "B" CAMERAS

Filmo Golf
Filmo 71's
Filmo 75
Keystone 16, B and A-7
Simplex
Stewart Warner 8
Stewart Warner Hollywood
Stewart Warner 532-A
All other cameras have 110° shutters

USING YOUR WESTON CINÉ EXPOSURE METER

Correct exposure of motion picture film depends upon the proper correlation of the—emulsion speed of the film—frames per second—type camera, "A" or "B"—aperture opening. Co-ordination of these factors makes picture taking a fascinating, worry-free pastime.

With your Model 813 you take care of the first three factors when you load your camera. Then you take a brightness reading of the scene. The correct f: stop for that scene lies directly opposite this brightness reading on the exposure guide.

A TYPICAL EXAMPLE

Assume, for example, you are going to take pictures in daylight with a Type "A" Camera at 16 frames per second, using a film with a Weston emulsion speed of 8 in daylight. (See enclosed folder for Weston Speeds.)

WHEN LOADING YOUR CAMERA

1. Set the bottom dial to "TYPE A CAMERA". (See D)
2. Set the top dial to an emulsion speed of 8. (See C)
3. Turn both top and center dials in unison, by means of the tab on the center dial, until the index points to 16 (frames per second). (See E)

These settings remain fixed until you use a different film speed—frames per second—or a different camera.

WHEN TAKING YOUR PICTURES

4. Aim the meter at the scene and note its reading. (Assume this to be 12.) (See B)
5. Glance across to the exposure guide and you will find f:6.3 directly opposite the Relative Brightness of 12. This is your camera setting. (See A.) Similarly, for a brightness reading of 10 the correct camera setting would be f:4.5, etc.

Remember that the example given above is for explanation purposes only. For your particular camera and film consult the camera listings on the opposite page and the film speed ratings in the enclosed folder.

TAKING METER READINGS

The Model 819 Exposure Meter actually "sees" the light reflected from a 25° angle, which is approximately equal to the angle formed by the hands of a clock when it is four minutes past twelve. This narrow acceptance angle permits the use of the meter at the camera position for all scenes of average contrast. Where extreme contrast is encountered and detail is desired on a particular object it is advisable to take a close-up reading from that object. This is especially advisable for color photography where the brightness of the main object is considerably different than the brightness of the background. When photographing a person, hold the meter within 18 to 20 inches of the face or, in general, twice as far from the object as the width of the object.

USE OF THE METER WITH COLOR FILM

Color film has less latitude than black and white emulsions and it is therefore necessary that exposures for color film be more critically exact than exposures for black and white film.

LIGHTING

Flat lighting is recommended at all times when using color film. Although light contrasts will produce pleasing effects with black and white film, excessive light contrast on color film results in poor rendition of colors. Outdoor color pictures should be taken on clear, cloudless days. For indoor work carefully plan the lighting so that it is diffused evenly and flatly over the subject.

ACCURACY OF EQUIPMENT

Tests on color film have proved that exposures must be correct to within one (1) f: stop in order to obtain correct color rendition. However, the accuracy of even the highest grade photographic equipment, including lens diaphragms, camera shutters and exposure meters, may vary in each case as much as ⅓ of a stop. If all errors are such that they cancel, no harm is done. But when they all tend toward over-exposure or under-exposure, the film speed setting of the meter may be changed to compensate for these equipment errors.

SIMPLE METHOD OF COMPENSATION

The Film Speed Values in the table below are correct for carefully checked equipment. If, with your camera, under-exposure or over-exposure is consistently obtained, change the meter emulsion speed setting as follows. For under-exposure (dense blues) try the next lower speed value. For over-exposure (weak, thin colors) try the next higher speed value.

These changes in film values artificially correct exposure to compensate for equipment errors. They should not be interpreted as representing actual changes in the film speed rating.

RECOMMENDED FILM SPEEDS FOR KODACHROME

Tests with carefully calibrated camera equipment have resulted in the recommendation of the following speed values as a standard, or starting point for determining the correct values for your photographic equipment.

8, 16 and 35 mm. Regular Kodachrome

Daylight (with or without haze filter)	8
Tungsten (with filter)	3

8, 16 and 35 mm. Type A Kodachrome

Daylight (with Type A filter)	8
Tungsten (no filter)	12

PANORAMING

Panoraming over areas which vary greatly in brightness requires considerable care when color film is used. For best results it is advisable to take separate readings of the bright and shaded areas. Then, when actually taking pictures, change the camera f: stop, as indicated by the meter, for each different set of conditions.

CORRECTIONS WHEN USING FILTERS

With Black and White Film

When filters are used the exposure must be increased to take care of the loss of light in the filter. Because the filter does decrease the amount of light the effect is the same as using a slower film. The following table shows the effective speed of the film and filter for the various filter factors.

Rated Film Speed	Film speed at which to set Ciné Exposure Meter Calculator for Various Filter Factors. Filter Factors						
	1.5 x	2 x	2.5 x	3 x	4 x	5 x	6 x
4	3	2	1.5	1.5	—	—	—
6	4	3	2	2	1.5	—	—
8	6	4	3	3	2	1.5	1.5
12	8	6	6	4	3	2	2
16	12	8	6	6	4	3	3
24	16	12	12	8	6	4	4
32	24	16	12	12	8	6	6

Illustration: Suppose the film being used has a speed of 24 and a filter having a filter factor of 3 will be used. Refer to the vertical column marked "Rated Film Speed" and find 24; then find 3 in the horizontal column marked "Filter Factors". Under 3 and in the same line as 24 will be found the figure 8. This is the value which should be set in the window of the calculator and no further correction, because of the filter, will be necessary.

CORRECTIONS FOR SHUTTER OPENINGS

Practically all Ciné cameras fall into two groups, either A or B, as listed on page 1. However, certain professional and special cameras are equipped with adjustable shutters or shutters which do not fall into the A or B groups. The simplest method of correcting for these shutter openings is to change the film speed setting of the exposure guide to the equivalent value given in the table below. First set the exposure guide to the TYPE A CAMERA position before using the table.

Rated Film Speed	Film Speed at which to set Ciné Exposure Meter Calculator for Various Shutter Openings. Shutter Opening Degrees.						
	45	90	120	150	180	210	240
1.5	—	—	—	—	1.5	2	2
2	—	—	1.5	2	2	2	3
3	1.0	1.5	2	3	3	3	4
4	1.5	2	3	3	4	4	6
6	2	3	4	6	6	6	8
8	2.8	4	6	6	8	12	12
12	4	6	8	12	12	16	16
16	5.6	8	12	12	16	16	24
24	8	12	16	16	24	24	32
32	11	16	24	24	32	32	48
48	16	24	32	32	48	48	—

Illustration: Suppose the shutter angle is 240 degrees and we are using a film rated at 16. Refer to the vertical column marked "Rated Film Speed" and find 16, then find 240 in the horizontal column marked "Shutter Opening Degrees". Under 240 and in the same line as 16 will be found the value 24. This is the value at which to set the film speed on the calculator. This of course does not mean the actual film speed is speeded up due to the larger shutter opening but merely corrects for the greater amount of light received by the film because of the longer time the shutter is open.

Note: On cameras having adjustable shutters the "Shutter Opening Degrees" will usually be found in the camera instruction books.

The Eastman Kodak Ciné Special has shutter openings of approximately 180° for the "Open" position, 90° for "½ Open" and 45° for "¼ Open".

CAUTION

Keep glass lens over the cell opening clean.

During dry cold weather the glass on the instrument is likely to become electrified by contact with the hands or clothing. This attracts the pointer and gives erroneous readings, but the charge on the glass can be easily eliminated by breathing upon it.

ZERO SETTING OF INSTRUMENT POINTER

When no light reaches the "electric eye" the instrument pointer should rest directly over the zero position on the scale.

If this is not the case, and there is no electrostatic charge on the glass (see paragraph above) then the pointer can be readily set to its zero position by slightly turning the zero corrector located below the light scale.

When making this correction place the meter back downward on a card or a book so as to exclude all light from the photo-electric cell, and hold it at an angle of about 45°.

NOTES