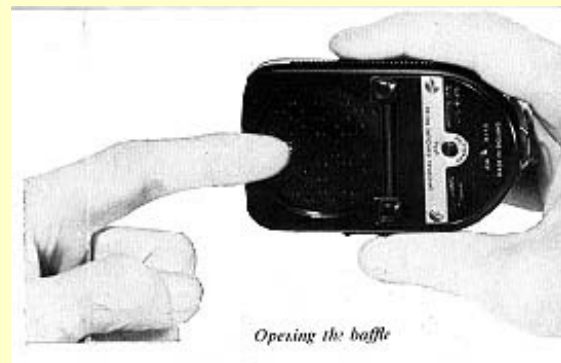


February 2010. Stephanie is seriously ill. Therefore, there may be considerable delay in responding to e-mails. We will try to continue to despatch orders promptly. The shop is open by appointment only. Thank-you for your continuing patience.

Weston Master IV Exposure Meter Instructions - with pictures

An annotated picture of the Weston master IV and pictures of the dials can be found on the [Main Pictures](#) page.

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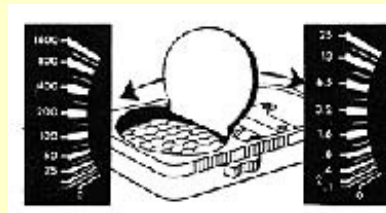
[Main Pictures](#)

[Instructions with no pictures](#)



High and Low Light Scales

The illustrations show the method of operating the baffle over the photo-electric cell. When the baffle is closed, the high light scale (0 - 1600) moves into position. The baffle should be kept closed when the light reads 25 or higher. If the light reading is less than 25, the baffle should be opened bringing the low light scale (0 - 25) into use.



Aiming the Meter

Hold the meter as shown here, being careful not to obstruct the photo-electric cell with your fingers or the neck cord. For outdoor general scenes, when the reading is taken from the camera position, tilt the meter sufficiently downwards to avoid measuring sky areas which would inflate the reading and cause under exposure. The required degree of tilt is dependent upon the scene.

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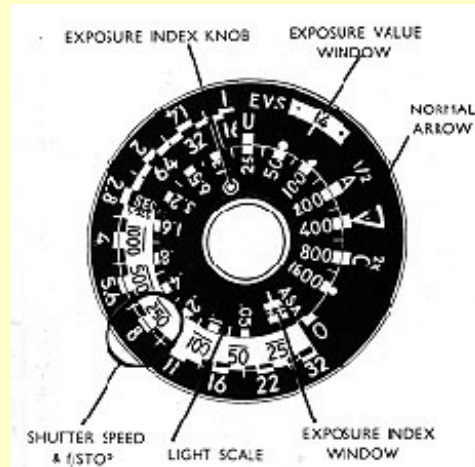
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Using the Meter



1. Set the film exposure index by moving the Exposure Index Knob until the Exposure Index number (ASA Index) of your film appears in the Exposure Index window.

2. Aim the meter as described in [Aiming the Meter](#)

On/Off Pointer Lock

By sliding the pointer lock to the left, the pointer will be locked at the reading; sliding the lock to the right releases the pointer. The meter must be held steady when operating the lock otherwise a false reading may be obtained. When the meter is not in use, the pointer should be left unlocked.

3. Transfer the light reading by turning the large knurled outer dial until the Normal Arrow is opposite the reading on the Light Scale of the Calculator Dial.

4. Set your camera with any combination of shutter speed and f/stop indicated. Any combination of shutter speeds and f/stops opposite each other on the Calculator Dial will give the same correct exposure. The combination selected will depend on whether you want a fast shutter speed with a large aperture (low f/stop number) to arrest action; or greater depth of field calling for a smaller aperture (high f/stop number) and a slower shutter speed.

Exposure Value Numbers

For cameras calibrated in Exposure Values, set your camera to the exposure value number

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appearing in the Exposure Value Window.

Classification of Scenes

It will simplify the classification of scenes to remember that the exposure meter measures the average in brightness value of the scene. Thus for normal exposures the arrow position on the Calculator Dial is used. However, for those scenes requiring less or more than the normal exposure the 'A' or 'C' positions may be employed, where half or double normal exposure respectively is required.

The following recommendations apply primarily when monochrome negative film is being used. See [Colour Photography](#) section.

Flat scenes lacking in contrast, such as distant views and landscapes on dull days, generally require less than normal exposure and more than normal development for best reproduction. Set the 'A' position on the calculator dial opposite the light value measured for such scenes, thus halving the exposure.

The contrasty scene, such as a sunlit street with dark shadows, for best reproduction requires more than normal exposure and less than normal development. Set the 'C' position on the Calculator Dial opposite the light value measured for these scenes, thus doubling the exposure.

Remember, however, that about eighty per cent of all scenes require a normal exposure and when in doubt about any scene, use the arrow position on the Calculator Dial.



Camera Position Method

The normal method of use of the meter is at the camera position, i.e. close to the camera. It is a simple method and the one most frequently used. This method gives a correct exposure for the average scene and does not isolate any particular object from an exposure point of view.

Take a light reading (avoiding sky areas) and set the Calculator Dial as already described. Chose a combination of f/stop and shutter speed consistent with the subject to be photographed.

Generally, the arrow position on the Calculator Dial should be used. For flat scenes, or for scenes with extreme contrast of highlights and shadows, use the 'A' or 'C' position as described in [Classification of Scenes](#).

The camera position method should not normally be used for back-lighted snow, sand or water, since spectacular reflections can result in under exposure of the shadowed areas. See also [Backlighted Subjects](#).

But for landscapes, general views and other photographs where a quick reading is wanted, the camera position method is quite satisfactory.



The Close-Up Method

In the Close-up Method the meter is held close to the subject being photographed. By doing this, the effect of the background is minimised and the film exposed for the main centre of interest.

Hold the meter close to the principal object, making sure that no light reaches the cell from unimportant parts of the scene.

When taking a reading, be sure that you do not cast a shadow on the subject. To avoid this, the meter may have to be held at an angle to the direct light on the subject, i.e. you can measure the reflected brightness by standing slightly to one side.

Having taken your close-up reading set the Calculator Dial to the arrow position and make your camera settings.

The above method is not recommended where the picture contains large light areas and relatively small but important dark areas. Additionally, when using this method for colour photography, it is equally desirable that there shall be no small but important light areas in an otherwise dark scene.



Brightness Range Method

The Brightness Range Method consists of measuring the light values of the lightest and darkest objects of the scene and thereby centering the exposure between the two extremes.

In any scene, various objects reflect different amounts of light. To produce a good photograph, all objects should be correctly exposed and thus the extremes of brightness should be measured.

Take a close-up reading of the darkest object in the scene (for example, a dark hedge) and note the light value. Then make a close-up reading of the brightest object (for example, a white wall) again noting the light reading.

Set the arrow on the Calculator Dial midway between the darkest and brightest object light values, i.e. the arrow should be the same number of divisions or blocks from the darkest light value as it is from the brightest.

You can then read off a suitable combination of f/stop and shutter speed for the scene, or alternatively, the exposure value.

Most monochrome negative emulsions can record a long range of deep shadows and bright highlights in a single negative. A knowledge of the limits of this range can prevent unnecessary loss of detail in extreme shadows or highlights when long range subjects are encountered.

The 'U' and 'O' Positions

The 'U' and 'O' positions on the Calculator Dial show the recommended limits of subject brightness, the ratio of these being 128:1. For a given setting of the dial, all objects whose light values fall on or between these two limits will be correctly exposed. Any object having a light value below the 'U' position will be under exposed and any object with a light value above the 'O' position may be difficult to reproduce.

By setting the 'U' position opposite the darkest object light value, the indicated exposure will be just sufficient correctly to reproduce that part of the scene.

Where the overall brightness is of a low order, such as a dark hall or cave, it might be impossible to obtain a reading from anything but a very bright object. If the 'O' position is set opposite this bright object light value, the indicated exposure will avoid over exposing the highlights.

Where the brightness range of the scene exceeds a ratio of 128:1 use of the 'U' position may involve some sacrifice of detail in the extreme highlights. Conversely, use of the 'O' position will cause loss of shadow detail.

Substitute Readings

It is not always convenient to take close-up readings and in such cases, substitute readings of nearby similar objects may be made, but ensure that the lighting is the same and that the objects are similar. In the example of the yacht, a close-up reading of a white handkerchief would be a substitute for the hull of the yacht, whereas the darkest subject, the flag, is accessible and its brightness can be measured.



Highlights and Shadows

In a scene such as that shown above, the brightness range greatly exceed the film range i.e. the patches of sunlight may give a light reading of 500 and the deep shadows a reading of -2. The average film range is thus not wide enough to give printable details in both the highlights and shadows, although a good average exposure can be obtained by using your meter as already described. According to the effect you require, however, you can choose to expose for details in the shadows by using 'U' position or, alternatively, for detail in the highlights by using the 'O' position. See The 'U' and 'O' Positions. The foregoing is particularly true of short range, slow film. Many films, however, have a range greater than 128:1 and when using such material, use of the 'U' position is often preferable.

Colour Photography

Until experience has been gained, avoid extreme lighting conditions and allow the color to

provide the contrast. For outdoor shots, if possible expose between 10 a.m. and 3 p.m. as the quality of the light is normally best during this period. If the sun is shining it should be behind the camera. Watch the reflection values of the surroundings i.e. a white dress can be turned pink from a red object reflection. Avoid shadows and subjects in shadow, as these are illuminated by skylight which is more blue than sunlight, for which the film is balanced. An ideal scene is one having low contrast and even illumination. Best results are obtained on a clear sunny day.

Colour Film Range

The range of scene brightness which can be recorded on colour film is far more restricted than that of monochrome material, the ratio being in the order of 30 to 1. Therefore the brightness ration in general should not exceed this figure.

For best colour rendering it will generally be found that the light value range of extreme colours will lie between the dot positioned one whole stop above the 'C' position and the dot positioned one whole stop below the 'A'. Objects whose light values lie outside this range may suffer in colour rendering. Effective pictures in colour are obtained from colour contrast rather than from highlights and shadows as in monochrome photography. The method recommended is the Brightness Range Method.

First take a close-up reading of the darkest colour in the scene. Then take a close-up reading of the brightest colour. Set the arrow position on the Calculator Dial midway between these light values and make your camera setting.

The above method locates the exposure in the middle of the film range and is suitable for the average subject in flat lighting. If the darker colours are of principal interest, a longer exposure may be preferable. Conversely, if the brighter colours are of interest then shorter exposure may be necessary.

It must be appreciated that varying the exposure to suit one end of the colour range may affect true rendering of the other. A useful suggestion is to use the 'C' position when exposing for the darker colours and the 'A' position for the brighter colours.

Correct exposure will, of course give the best results but if in doubt, remember that slight under exposure gives better colour rendering than over exposure. With negative/positive colour processes, however, the opposite is the case and slight over exposure is preferable to under exposure. In both forms of colour photography, it is normally desirable to avoid shadows and extreme contrast in lighting.

When the same scene contains large areas of a light tone, normal use of the meter will result in an inflated reading and consequent under exposure. In such cases a reading should be taken of an average portion of the scene, avoiding the areas of light tone.



Cine Photography

A cine camera is essentially the same as a still camera except that it exposes a series of pictures at a fixed shutter speed. For cine work the Brightness Range Method is recommended.

Make close-up readings of the darkest and brightest objects in the scene and set the arrow position midway between the light values obtained. The correct f/stop to use will then be found opposite the particular shutter speed of your cine camera.

The standard number of frames exposed by the average amateur cine camera is 16 per second (*now 18 for silent and 24 for sound*) at a shutter speed of 1/30th second. For other frames per second than 16, the shutter speed is proportional. Use the settings shown in the following table:

8 frames per second 1/15th

16 frames per second 1/30th

24 frames per second 1/50th

32 frames per second 1/60th

48 frames per second 1/100th

64 frames per second 1/125th

Some cameras may have a different shutter speed at 16 frames per second, such as 1/40th or 1/50th and the f/stop for these should be read off against this shutter speed on the Calculator Dial. If the shutter speed of your camera is unknown, ascertain it from the camera manufacturer.



Backlighted Subjects

If the meter is aimed directly at a back-lighted subject, i.e. one where the main lighting comes from behind, it is obvious that the light value reading can be inflated resulting in under exposure.

To overcome this, turn around and take the reading on a similar object with your back to the lighting so that your body casts a shadow on the substitute object.

For example, in the picture above a close-up reading could be made of a handkerchief for the girl's blouse, ensuring that the substitute object is in shadow.

For all beach scenes, light readings should be taken with the sun over your shoulder. Direct reflections from sparkling water should be avoided when taking light readings.

Additional Notes - Still and Cine

High Altitudes Films are sensitive to ultra-violet radiation, of which there is a considerable

amount present at high altitudes. To eliminate the effect of this, it is always good practice to use a haze or ultra-violet filter. No exposure correction is necessary so use the meter in the normal manner.

Snow, Beach and Water Scenes. Take readings of the brightest and darkest objects and set the Arrow midway between, or take a reading from the palm of your hand and use the 'C' position on the Calculator Dial. The best rendering of snow texture results when the snow is back or cross lighted.

Copy Work. When copying pages of a book or photographs in black and white or colour, take a reading from a white card placed over the subject. Divide the exposure index by five and set this value in the Exposure Index Window. Set the Arrow at the light reading obtained and select the camera settings in the usual manner.

Television. Adjust the television screen for high contrast. Place the camera on a tripod, set the shutter at 1/25 second and focus on the lines across the screen. Dim the room lights. Take a close-up average reading holding the meter about six inches from the screen. Set the Normal Arrow at this reading and select the camera settings in the usual manner.

Sunsets and Sunrises. Aim the meter directly at the subject and set the Normal Arrow at the reading.

Aerial Pictures. To prevent the sky from inflating the reading, aim the meter down towards the ground. As a general guide, below 1,000 feet use the meter reading indicated; from 1,000 to 2,000 feet set the Arrow on the Calculator Dial one space higher than the meter reading, thereby reducing the exposure by 1/3 f/stop; from 2,000 to 4,000 feet, set the Arrow two spaces higher than the meter reading (an exposure reduction of 2/3 f/stop). Above 4,000 feet, set the 'A' mark instead of the Arrow to the meter reading (an exposure reduction of one f/stop). If no other filter is in use, a skylight filter, haze filter or ultra-violet filter should be used, in which case no exposure correction is required.

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