

PATERSON

MADE BY
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CdS
ENLARGING
METER

open this flap for illustration

PATERSON CdS ENLARGING METER



The Paterson Meter provides exposure times for enlarging black and white negatives on all makes and grades of paper. It is designed as an integrating meter, reading all the densities in the negative and computing their average value. Under some conditions it may also be used for spot readings.

The Meter operates on 210-250 volts AC supply. It is suitable for use with all normal enlargers but not for enlargers with cold cathode illumination.

Please read the following instructions before using the Meter.

INSTRUCTIONS

Diffuser

The diffuser may be hand held under the lens or on some enlargers it may be permanently fitted to swing under the lens. It should always be positioned at the same distance from the lens, preferably between 1 and 2 inches.

Safelight

All room lights, including the safelight, should be switched off when taking readings. CdS cells are sensitive to light of all colours and are affected even by safelight illumination.

Paper speeds

Unlike films, papers are not given a speed rating by the manufacturers. The speed can vary between different types of paper, even of the same make, and processing conditions can also affect the speed. For this reason no list of paper speeds can be given and it is necessary to make a short test to establish the speed of the paper under the operator's conditions.

To do this a test strip is made from a normal negative which has a full range of tones without large areas of dense black or clear film by giving a series of stepped exposures. The test shows the correct exposure time for the print and this is transferred to the meter to set it to that batch of paper.

For consistent results, processing should be standardised, e.g. developer time and temperature should always be the same.

Neon striking point

The striking point is found by turning the control dial fully anti-clockwise. At this point the neon should be out. Now turn the control slowly clockwise until the neon just lights, even if it flickers. If at this setting the neon goes out within 1 or 2 seconds, turn the control slightly further until the neon just comes on and stays on. Confirm this setting by small movements of the control to extinguish and re-light the neon.

Exposure Time Indicator

Neon Light

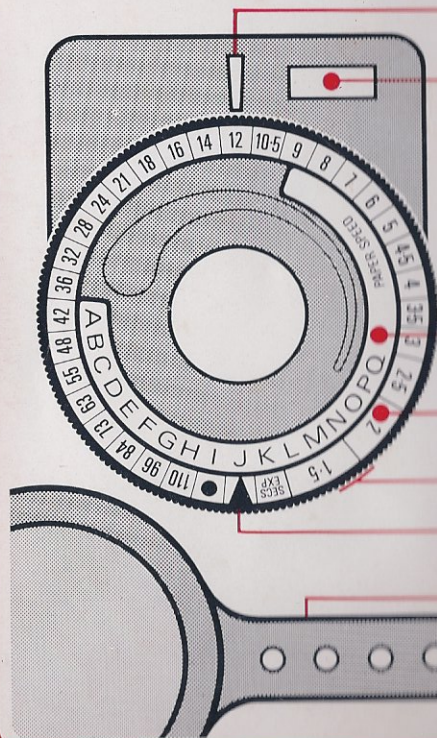
Paper Speed Scale

Exposure Scale

Control Ring

Paper Speed Setting Arrow

Diffuser



If the neon does not go out at any point, close the enlarger lens to a smaller aperture and proceed again. Conversely, if the neon does not light, open the lens to a larger aperture.

For consistent readings always place the Meter on the baseboard with the cell window directly beneath the lens.

Stray light

Use the correct negative carrier for the size of negative, or a carrier with adjustable masking. Stray light passing round the sides of the negative will cause the Meter to give incorrect readings.

Non-average negatives

The Meter gives correct exposure for a wide range of normal negatives. Occasionally a negative will contain unusual proportions of dark or light areas and the print, whilst acceptable, may be too light or too dark. In this case the exposure indicated may have to be adjusted to produce the best possible print.

Setting the paper speed

Open rear flap for illustrations.

Compose and focus a normal negative in the enlarger with the lens set at a medium aperture.

Switch off room lights and safelight.

Place Meter on baseboard and with diffuser under lens, rotate control ring to set neon striking point as described.

Remove Meter but do not alter its setting or the enlarger settings.

Make a test strip to find correct exposure time for print (in the example this is 12 seconds)

Hold control ring stationary and turn exposure scale until this time is set against the exposure indicator.

The speed setting arrow now points to a letter on the paper speed scale. This letter is the speed for this batch of paper and can be written on the packet for future reference (Letter J in the example).

To use the meter

Check that the paper speed setting arrow points to the correct letter for the paper in use.

Place the meter on the baseboard directly beneath the lens. Switch off all lights, including safelight.

With the diffuser under the lens, rotate the control ring to set the neon striking point. Read off the time against the exposure indicator.

NOTES

Hand capacitance

An effect known as 'hand capacitance' sometimes occurs with electronic instruments and this may cause the neon to light up or vary in brightness when the operator's hand is close to the Meter. Turning the plug round in the socket will reduce or eliminate the effect.

Use with constant exposure time

The Meter may also be used with a fixed exposure time which can be a very convenient method of making long runs of similar size prints where the exposure is not likely to vary too much. The exposure time for the first negative is found in the usual way with the enlarger lens set at a medium aperture. To print subsequent negatives the neon striking point is set by opening and closing the lens aperture instead of adjusting the Meter. This alters the exposure by increasing or decreasing the illumination, the exposure time remaining the same for each print.

Use for 'spot' readings

Spot meters are used to read a small area of the negative and this method can be advantageous when printing a number of negatives containing large areas of even tone, such as skin tones in portraits. The Paterson Meter may be used in this way provided the image area from which the reading is taken is larger than the cell window. The area selected is usually the deepest shadow or brightest highlight which is required on the print but may also be a mid-grey tone.

When spot readings are used, the initial paper speed setting must be established by the same method. Select an area of tone fairly close to the centre of the negative and position the meter on the enlarger base so that this area covers the cell window. Where it is necessary to measure a tone nearer the edge of the picture, the negative should be moved temporarily in the carrier to bring the area closer to the lens axis so the full light is projected onto the cell. Follow the normal procedure for setting the paper speed but without using the diffuser.

For printing subsequent negatives always select a similar tone from which to take the reading.

Use with variable contrast papers

Where the variable contrast filters are given an exposure factor by the manufacturer, the initial paper speed test and all subsequent readings should be made without using the filters. The exposure time for the print is then found by multiplying the time indicated on the Meter by the exposure factor for the filter in use.

Where no exposure factors are given make a separate test strip through each filter in turn to find out the paper speed setting for it. Subsequent readings are taken with the appropriate filter in place and with the paper speed for that filter set on the Meter.



CdS ENLARGING METER

