



Instructions for use

Contapol

Polarizing Filter

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ZEISS IKON



Purpose of the CONTAPOL

With a polarizing filter such as the CONTAPOL, reflections on highly polished, non-metallic surfaces can be reduced or even eliminated.

Mode of Operation of the CONTAPOL

When ordinary unpolarized light strikes the reflecting surfaces of non-metallic objects (such as glass, water, glazed paper and plastics, polished wood, lacquer, etc.) it is reflected as a more or less polarized light. Light reflected at approximately 35° from such surfaces is completely polarized. While the rays of ordinary light vibrate in all planes perpendicular to the direction of its propagation, polarized light vibrates in only one plane. The polarizing filter CONTAPOL transmits only

light vibrating in one plane. The intensity of the polarized light is more subdued by the filter the more the direction of its vibration plane deviates from the direction of the transmission. The intensity of the polarized light can be controlled at will by rotating the filter while the ordinary light, vibrating in all planes, is subdued to about $\frac{1}{3}$ indifferent to the position of the filter.

For this reason a filter factor $\times 3$ must be taken into account for all exposures with the CONTAPOL, that is, approximately $1\frac{1}{2}$ steps of the diaphragm, shutter speed or exposure value scales.

How to use the CONTAPOL

When using the CONTINA hold the CONTAPOL in front of the

eye and examine the subject through it. Turn the polarizing filter until the desired effect is reached. Then slip the filter on the lens in exactly this position.

NOTE: The lens must be set to the correct distance beforehand, since the position of the polarizing filter would otherwise be changed when setting the distance.

With the CONTAFLEX the CONTAPOL is simply screwed into the lens after focusing. The subject should then be examined in the viewfinder and the milled front-ring of the polarizing filter turned until the reflections are sufficiently subdued or eliminated. The polarizing filter is now set correctly for the exposure.

NOTE: With the CONTAFLEX alpha and beta as well as I and II the adjustment of the CONTAPOL is best done after focusing using the middle finger of the right hand, while the



middle finder of the left hand holds the distance setting ring of the camera in order to prevent the rotation of the filter from displacing it and altering the focus. With the CONTAFLEX III and IV the CONTAPOL can be adjusted at will either before or after measuring the distance. If the CONTAPOL is rotated further (up to 90°) from the position in which the reflections are sufficiently subdued, the reflections will return. Thus it is simply a matter of taste whether these highlights should be emphasized, subdued or completely eliminated.

If the reflections cannot be subdued sufficiently the standpoint of the camera should be changed in order to obtain an angle of about 35° in relation to the reflecting surface. When there are very large surfaces (sheets of water) the reflecting areas of which form various angles with the camera, it is impossible to eliminate all reflections at once. It is advisable to eliminate only those which are most annoying.

Other fields of application

The CONTAPOL can also be used for landscapes, sky and cloud exposures. By turning the CONTAPOL a blue sky can be darkened, because part of the blue light of the sky reflected from particles in its atmosphere is more or less polarized according to its angle to the sun. Towards the sun and vice versa (sun at the back) there is no polarization at all. The blue sky can be darkened and white clouds emphasized with black and white pictures, which means that the CONTAPOL has the approximate effect of a yellow filter.

In colour photography, the CONTAPOL opens up new fields as other filters cannot be used with colour films. CONTAPOL offers the only known means of sky brightness control in colour photography. The blue of the sky can be emphasized even to the effect of an approaching thunderstorm, without

distorting the colour rendering. The exposure factor is, of course always $3 \times$ and must be taken into account.

PROXAR lenses ϕ A 28.5 mm can be used with the CONTAPOL. However, in this case there will be more or less vignetting at the corners of the image, according to the distance and diaphragm setting.

All accessories should always be slipped on top of the polarizing filter.

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