Kodak

Neutral Test Card

GRAY SIDE –18% Reflectance

WHITE SIDE–90% Reflectance

Designed Primarily For Color Photography

New—Improved Gray Coating

A new ink formulation and a protective lacquer overcoat have been coated on the gray side improving the spectral reflectance, resistance to fading, and resistance to fingerprints and other soil. The instructions for using the card are unchanged.

FOR USE WITH AN EXPOSURE METER IN ARTIFICIAL LIGHT

- **To determine exposure**
- **To adjust lighting ratio**
- **To check lighting distribution**
- **To control background rendering**

FOR USE WITH* KODACOLOR *AND* KODAK VERICOLOR *FILMS

- **To provide control in negatives for determining printing exposures**

This envelope contains: **4 CARDS AND COMPLETE INSTRUCTIONS FOR USE**

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KODAK NEUTRAL TEST CARD

White Side . . . 90% Reflectance **Gray Side . . . 18% Reflectance**

The KODAK Neutral Test Card is designed to provide a reference area of known reflectance for making exposure meter readings in scenes or for inclusion in pictures as an aid in controlling their reproduction. It is especially useful where precision is required, as in color photography. Manufacture of the Test Card is controlled within close limits to produce neutral surfaces of standardized reflectance values. To prevent specular or mirrorlike reflections, both sides have a matte finish.

USE WITH AN EXPOSURE METER IN ARTIFICIAL LIGHT

Basically, meter readings of the Test Card are measurements of incident illumination. They provide a reliable method of exposure determination, and are also useful in adjusting the lighting ratio, checking lighting distribution, and controlling background rendering.

Exposure Determination

The following technique of making meter readings is especially valuable with reversal films, which have more limited exposure latitude than negative films.

Hold the card straight up and down, close to and in front of the subject, and facing halfway between the camera and the main light. Make the light reading of the card with the meter not more than 6 inches away. Do not allow your shadow or that of the meter itself to affect the reading.

If made on the gray side of the Test Card, the meter reading will, on the average, be the same as a reflected-light reading of an average indoor scene, taken from the camera position. Thus it can be used to compute exposure by operating the meter calculator in the normal manner for reflected light.

In dim illumination, a more satisfactory deflection of the pointer on the meter light scale can be obtained by using the white side of the Test Card. Since the white side reflects five times as much light as the gray side, divide the film speed value by 5 and round it to the nearest calculator setting. Then use the exposure indicated by the meter calculator for a normal subject.

Since the Test Card reading is similar to a measurement of incident illumination, it takes no account of subject material that differs in reflectance from the average. Therefore, with either side of the card, decrease the calculated exposure by 1/2 to 1 stop if the subject is unusually light. If the subject is unusually dark, increase the calculated exposure by 1/2 to 1 stop.

Copying and Close-Up Work. In copying work, use of the gray side of the Test Card is recommended for determining exposures for either color or black-and-white films. To make the exposure meter reading, place the card in the same plane as the original to be copied. Use the normal film speed value and compute the exposure directly with the light reading so obtained.

Whenever the subject is closer than eight times the focal length of the lens, you should allow for the decrease in effective lens opening due to lens extension. You can determine the proper correction with the close-up exposure information in the *KODAK Professional Photoguide,* No. R-28.

Checking the Meter and Camera in the Studio. To assist in determining optimum exposure, a meter must be accurate. If your meter does not seem to be working dependably, get it adjusted or repaired.

A good method of calibrating the meter is to make a practical photographic test under the actual conditions of use. Using the meter setting currently recommended by the film manufacturer, calculate the proper exposure for a studio subject that is typical of the subject matter to be photographed. With this calculated exposure as the midpoint, make a series of actual camera exposures differing by 1/2 stop, and write down all data for later reference. In effect, such an exposure series is equivalent to using several different speed values for the same type of film. After the test films have been processed, the meter setting that gave the best result can be selected for future work.

This procedure for calibrating the meter takes into account variations in lens, shutter, and individual working conditions, although these may change with time. It does not include the effects of manufacturing variation on film speed or the effects of incorrect storage, lighting, or processing. The subject of speed variations is covered in detail in the Data Book *KODAK Color Films*, No. E-77.

Critical Work with Color Films. When color films are to be used for critical work, an exposure test is recommended. The test should be made on film of the same emulsion number as that to be used for the actual pictures. So far as possible, all conditions, including processing of the film, should be identical with those to be used for the final work. In this way, allowance can be made for all of the factors affecting film speed.

Adjusting Lighting Ratio

Lighting ratio expresses the relationship between main plus fill-in illumination and fill-in illumination alone. In general, this ratio should not exceed 3 to 1 when full detail is wanted in a final color reproduction for viewing by reflected light.

Even if the lighting arrangement is complex, the lighting ratio can be determined, and if necessary adjusted, by use of the Test Card. Hold the card straight up and down, close to and in front of the subject. When you are reading main plus fill-in illumination, turn the card to the position that gives the maximum reading on the meter light scale; all lights should be on except those positioned so far to the side or back that they might influence the meter directly. When you are reading fill-in illumination, hold the card facing the camera lens; the main light or lights should be turned off.

Checking Lighting Distribution

Normal color rendering in all areas of an indoor subject will be obtained only when the whole scene is adequately illuminated. Otherwise there may be areas that will be reproduced so dark that color and detail are lost. Such areas are often difficult to recognize in viewing the original scene because visual adaptation effects tend to make them appear adequately lighted.

Lighting distribution can be checked, and if necessary adjusted, by using an exposure meter to read the light reflected from either side of a KODAK Neutral Test Card held, facing the camera, in various positions over the set. The readings should be made with all lights on except those positioned where they might influence the meter directly.

Controlling Background Rendering

The same technique as that described above for checking lighting distribution can be used to control the shade of background colors. Normal background rendering will be obtained when the illumination falling on unshadowed areas of the background is approximately the same as that falling on the actual subject. However, if an available background is darker or lighter than desired, it can be made to photograph lighter or darker by adjusting the background illumination until a proportionally higher or lower meter reading is obtained from a Test Card held close in front of the background. If—as it should be—the exposure is based on subject illumination, the rendering of the subject will not be affected by a change in the background illumination.

USE WITH AN EXPOSURE METER IN DAYLIGHT

As a general rule, you can determine exposure most accurately when you hold the Test Card near the principal subject. Outdoors, it is sometimes difficult to do so, as for example if you are making scenic or telephoto pictures. Or there may be traffic, water, or some other barrier between you and your subject. In such situations, you can make an exposure reading of the card at the camera position, provided the lighting there is the same as that falling on the subject. Aim the card in the same direction that you would if it were at the subject position.

The information in the following paragraphs applies to subjects of average reflectance. If the subject is unusually light, decrease the calculated exposure by 1/2 to 1 stop, and if the subject is unusually dark, increase the calculated exposure by 1/2 to 1 stop.

SUNLIGHT—Frontlighted or Sidelighted Scenes

Hold the Test Card straight up and down and face the gray side in a direction halfway between the sun and your camera. Make the light

reading of the card with the meter not more than 6 inches away. Do not allow your shadow or that of the meter itself to affect the reading. Calculate the exposure in the normal way, but use a lens opening 1/2 stop larger than the meter indicates for a frontlighted scene, 1 1/2 stops larger for a sidelighted close-up scene.

Note that under most sunlight conditions, it is *not* necessary to tilt the card because of the elevation of the sun. In the equatorial region, however, the sun reaches a position directly overhead at midday, and full toplighting results. In this special case, tilt the card back to an angle of about 45° with the horizon.

OTHER OUTDOOR LIGHTING CONDITIONS—

Backlighted Subjects, Subjects in Shade, Overcast Days

Hold the Test Card straight up and down, with the gray side facing directly toward the camera. Make a meter reading of the card and adjust the calculated exposure according to the following table:

Lighting	Exposure Adjustment
Backlighting: Close-up scenes	Reduce exposure 1/2 stop
Backlighting: Subject at medium distance with sunlit background	Reduce exposure 1 1/2 stops
Shade	None
Overcast Day	None

USE TO PROVIDE A CONTROL PATCH

The KODAK Neutral Test Card can be used with KODACOLOR Films and KODAK VERICOLOR II Professional Films for any of the purposes described above. In addition, its inclusion in the picture area is recommended as an aid in determining exposures and printing filters for those who (a) make their own prints from color negatives, or (b) have their negatives printed by laboratories that make use of a gray-card image. In some cases, a gray-card image may also be helpful in controlling the reproduction of color transparencies.

The required size of the image of the Test Card varies somewhat, depending on the method used to determine printing exposures. In general, the shorter dimension of the image should be about 1/4 inch. In the special case of using it with the KODAK EKTACOLOR FilterFinder, the gray-card image should fill half the picture area.

Place the card at the center of interest, where it receives the full subject lighting. Do not, however, locate the card near colored objects that reflect colored light onto it, because the control patch in the negative will then be misleading. Make another negative without the gray card. This negative can then be used to make print exposures based on measurements of the gray-card negative.

Occasionally, it may be possible to place the card along the edge of the scene area in such a position that it does not interfere with the actual picture and can be trimmed off the final prints. Particularly in artificial light, however, it may be difficult to obtain the full subject lighting along the edge of the scene. For this reason, it is generally easier to make an extra negative with the card at the center of interest.

A gray-card negative must, of course, be made on film of the same emulsion number, and if possible, the film should come from the same package. The film must also be processed with the other film exposed under the same lighting conditions.

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Neutral Test Card
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