

Introducing

The

Color Control Meter



TYPE PC-1



HOW TO OPERATE

1

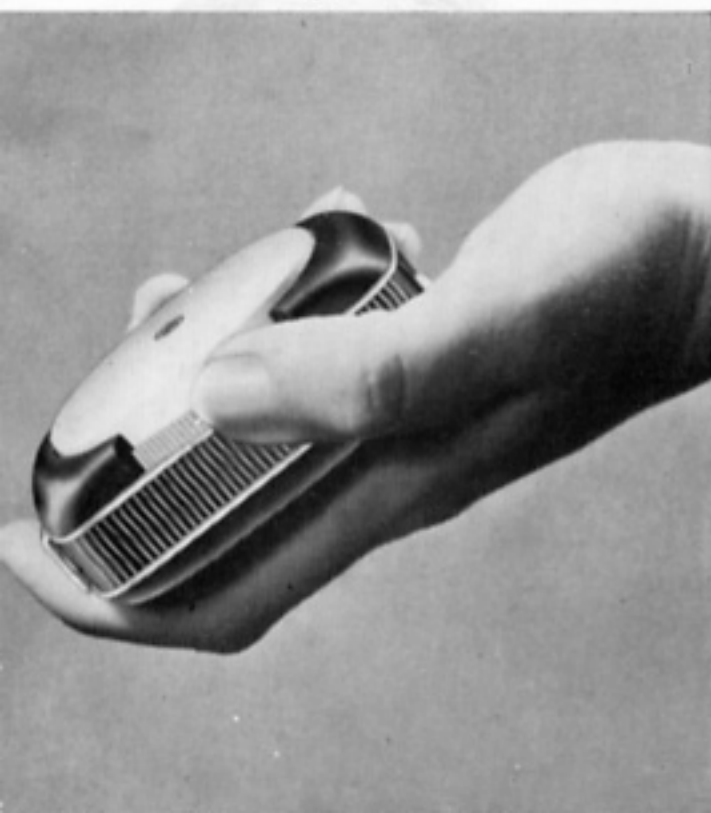
Select scale card for your film and filters and insert in back of meter.



2

Aim dome towards camera but pointing up 45°, and hold meter.

like this



or this.



3 Turn back dial (or dome) to bring red pointer in line with fixed white pointer.

Note: Back dial and dome are geared to turn together. When turning one, never hold the other.

3

4

In window on back, Read:

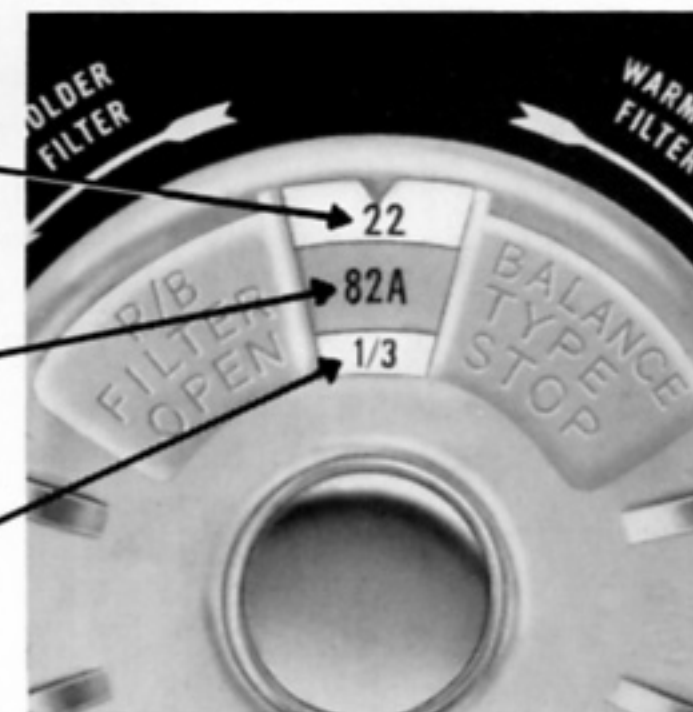


R/B balance units*

Filter suggested

Exposure increase in f-stops

*For reference only.



COLOR VARIATION OF LIGHT

The color of light affects the color balance of photographs. Most light sources used for color photography are near-white and vary in color only in red-dishness or bluishness. The color control meter measures this variation in terms of red/blue (R/B) balance, and indicates the filter which should render the photograph normal in color balance. The meter is accurate for all phases of daylight, tungsten, and photoflood light, but is not recommended for fluorescent, mercury, or gas discharge lamps.

DAYLIGHT

When sunlight penetrates the atmosphere, the blue light is scattered more than the red, making the sky appear blue and the sun reddish yellow. In the middle of a clear day, the sunlight and skylight combine into white daylight. Daylight color film is balanced for this mixture of reddish sunlight plus some blue skylight. An overcast sky diffuses sunlight with the skylight, usually resulting in bluish light. When the sun is near the horizon, direct sunlight is more reddish because it has traveled farther through the atmosphere and more of its blue light has been scattered. It is difficult to judge by eye the color of daylight because there is no reference for comparison. However, the color control meter measures the color (R/B balance) quite accurately and indicates the corrective filter to be used.

This R/B balance of the light has a proportional effect on the color balance of the photograph. Photographs taken in the reddish light of the setting sun are said to be warm (high R/B balance). Photographs of the same scene illuminated by the blue sky only are bluish and are said to be cold in rendering (low R/B balance).

The sky is deepest blue opposite the sun. A back-lighted subject is largely illuminated by blue sky and would photograph with a bluish cast. The color control meter will detect this bluishness and suggest the use of a warm filter.

ARTIFICIAL LIGHT

Tungsten or photoflood illumination is much more reddish than daylight. Tungsten type color films are especially balanced for this type of illumination and are more sensitive to blue light than are daylight films. Either type of film can be used with either type illumination provided the filter indicated by the color control meter for the particular film is used.

The color of tungsten or photoflood illumination varies with the age of the lamp, the voltage, and type of reflector. These differences can be easily measured with the color control meter, which also indicates the proper corrective filter.

SUGGESTIONS FOR USING THE PC-1

The color control meter enables the user to make very satisfactory color photographs in almost any weather, at any hour of the day, in any season of the year. It tells the photographer the R/B balance of the existing light so that he may, when desirable, purposely exaggerate the colors in the scene. The user is always in control of color quality; he need no longer be dependent on the weather.

PHOTOGRAPHY OF SCENES

In outdoor scenes the R/B balance of the incident light is measured by holding the meter in the scene and aiming it towards the camera with the dome tilted upwards at about 45°.



No filter



Kodak No. 81B filter

On this rainy day the PC-1, pointed at the sky, suggested a Kodak No. 81B filter.

On rainy and overcast days, the meter usually suggests the use of a warm filter. However, this is not always the case since light of normal color may be encountered in this weather. Hazy sunlight, when the meter indicates no filter required, is exceptionally satisfactory for color photography.



No filter



Kodak skylight filter

In sunlight, the next warmer filter than that suggested often improves pictorial quality.

Late afternoon sun imparts a reddish hue to illuminated objects. While the meter may suggest a bluish filter for this lighting, such correction may not always be pictorially desirable. The color of light from the setting sun imparts distinctive beauty to many landscapes. For outdoor portraits, however, the filter indicated by the meter or a slightly warmer one, usually is preferable.

Care should be taken that direct sunlight does not strike the dome at extremely oblique angles. For sidelighting measure the sun and sky separately by aiming the meter towards the sun or sky, shielding the meter from the sun when measuring the sky. A filter intermediate between these two extremes should be used, its warmth depending on whether the sun or sky illuminates the important part of the scene.

PHOTOGRAPHY OF SPECIFIC OBJECTS



Blue skylight



Blue skylight with
Kodak No. 81B filter



Direct sunlight

By using the filter suggested, portraits of equal quality flesh tones can be made with back lighting.

In making color pictures of specific objects such as flowers, people, and interior scenes, the color of the light illuminating the important part of the subject should be measured. The meter is held at the subject position and aimed towards the source of light. For instance, with a sun-lighted portrait, the PC-1 would be held near the subject's face and pointed towards the sun. If the subject is back-lighted, the meter should be shielded from the sun and pointed towards the sky which illuminates the face. Flesh tones often appear more pleasing if a slightly warmer filter is used than that suggested by the meter. Bluish filters should be used with caution when photographing people except when the sunlight is extremely reddish near sundown.

CHOICE OF FILMS

Ordinarily, daylight color film should be used in daylight, and tungsten type film in tungsten light. Use of daylight film with conversion filter for tungsten is not so satisfactory from the standpoint of color rendition and increase in exposure.

INTERIOR PICTURES

Scenes photographed indoors are ordinarily illuminated by tungsten lights. The meter is held in the subject position and aimed towards the light source. If two lamps are used the meter may be aimed half way between them. Since the light from a lamp may be different in color than that from its reflector, hold the meter about five feet from a lighting unit and in the approximate center of the light beam.

With lamps differing in R/B balance by more than two units on the meter scale, a compromise color rendition may be desired. Measure each lamp separately and select an intermediate filter. If equipment is available, the voltage can be corrected on individual lamps to obtain correct color meter reading.

EXAGGERATION

In many cases in pictorial photography, artistic effects are enhanced by exaggeration of the color. The meter tells the user the R/B balance of the existing light. By using warmer or colder filters than those suggested by the meter, exaggerated color effects of unusual character may frequently be obtained.

In some instances the filter recommended by the PC-1 may not produce in the picture the degree of warmth that you would like best. The meter can only suggest the rendition which, on the average for all types of scenes, is likely to be pleasing. Your personal preference for accentuating the mood in a picture, unusual colors in the scene, and other factors, sometimes dictate a filter selection different from that recommended by the meter.

A warmer filter than that indicated may be preferred in the following situations: rainy days, pictures of people (especially in direct midday sunlight), and pictures of rocky scenery. Scenes suitable for a bluer filter than that suggested by the meter are rare. Such scenes include some snow and water scenes without people.

HOW TO CARE FOR THE PC-1 METER

POINTER ADJUSTMENT

As long as your meter receives normal care, only an occasional check on the alignment of the pointer will be required.

To check the pointer alignment, completely exclude light from the white opal dome. The red pointer should line up with the white fixed pointer. If it does not, bring it into line by turning the small screw located under the scale card.

SERVICE

Although the PC-1 will withstand normal shock in handling, be particularly careful not to drop or bang it. A neck cord is provided with each meter. Your meter may be conveniently carried in the G-E leather case which can be purchased from your dealer.

If your PC-1 becomes inoperative, pack it in a well-padded box and return it to:

GENERAL ELECTRIC COMPANY
40 Federal Street
West Lynn 3, Massachusetts

When returning a meter, attach an identification tag bearing your name and address and the serial number found on the bottom of the meter.

If its condition results from defects in material or workmanship and your PC-1 is mailed or shipped within one year after date of purchase the meter will be repaired without charge. However, if the condition re-

sults from abuse or mishandling, or if more than one year has passed since the date of purchase, a charge at standard rates will be made for service and postage.

PERFORMANCE

The PC-1 is a precision instrument. It should receive the same careful handling and treatment given to an expensive camera or any fine precision instrument.

To maintain the factory precision of your meter the suggestions below should always be followed.

1. The meter should not, under any circumstances, be tampered with or taken apart. It should not be subjected to extreme temperatures or moisture.
2. Keep the PC-1 in its carrying case. Prolonged exposure to the sun or bright lights, while not harmful, may cause temporary changes in readings.
3. To obtain best measurements of spotlights and floodlamps, hold the meter about 5 ft. from them. The meter can then measure the combined light from the source and the reflector surface.
4. When measuring light from bright sources (such as the sun, spotlights, or floodlamps) aim the dome directly at the light source.

If two or more lights are used, and they are more than 60° apart, measure them separately.

SCALE CARDS

The PC-1 is provided with several scale cards for use with different color films. The extra cards can easily be carried in the pocket in the back cover of the G-E leather carrying case.

New Frontiers in Color—

The color control meter is a remarkable achievement in photographic instrumentation. It has been engineered to meet the practical requirements of amateur color photography yet it incorporates the high degree of accuracy and exceptional performance ordinarily available only in laboratory equipment. The meter is so small it can be carried in the pocket and operated with one hand. It gives the photographer complete information on the preferred use of corrective filters with his particular film. The meter not only helps the user make color transparencies of more uniform color balance, but it also opens new frontiers for creative pictorialism in achieving unusual artistic effects.

General Electric maintains an exposure meter information bureau and sensitometric laboratory to help photographers solve their problems in exposure, lighting, and color control. You may write to the bureau at any time in regard to G-E photometric products, addressing correspondence to:

GENERAL ELECTRIC COMPANY
Exposure-meter Information Bureau
40 Federal St., West Lynn 3, Mass.

METER AND INSTRUMENT DEPARTMENT

GENERAL  ELECTRIC

WEST LYNN, MASS.

GEJ-2151

**SCALE CARDS
FOR
G-E COLOR CONTROL METER
(Type PC-1)**

These cards are used interchangeably in the PC-1. Select the one which corresponds to the type of film and filters you plan to use. See instruction book GEJ-2152 for details of using the cards with the meter. They may be carried in the pocket of the meter carrying case.

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GEJ-2427

**SCALE CARD
FOR
G-E COLOR CONTROL METER
(Type PC-1)
WHEN USING
VARIABLE COLOR FILTER
(Type PA-1)**

This card is used in the G-E Type PC-1 Color Control Meter to obtain filter settings by meter reading. See instruction book GEJ-2411 for details of using the filter. The card may be carried in the pocket of the PC-1 meter carrying case.

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