

TIFFEN Color Separation Guide and Gray Scale (Small)

The Tiffen Color Separation Guide and Gray Scale is a quality control device consisting of two components each 8" long.

The TIFFEN Gray Scale

The gray scale is a quality-control device of stepped, neutral values to help the user to:

- Compare the tone values of reflection originals with the tone values of their reproduced image.
- Compare exposure and printing processes so that changing conditions can be identified, measured, and controlled.
- "Balance" negatives and positives in traditional color reproduction.
- Determine values for plotting tone-reproduction curves.

The gray scale is composed of 20 density steps; each step has a density increment aim of 0.10 and relative density values from a nominal "white" of approximately 0.05 to a 1.95 density black. Density increments are tightly controlled and will vary only slightly from the nominal density value. Neutrality and uniformity are also tightly controlled. The background approximates an 18% neutral gray to neutralize flare and adjacency effects.

For additional quality control, the gray scale also includes 9 color control circles (R) Red, (G) Green, (B) Blue, (W) White, (G) Gray, (K) Black, (C) Cyan, (Y) Yellow, and (M) Magenta.

NOTE: A, M and B patches correspond with reflection densities of 0.0, 0.70 and 1.60, respectively, which represent average highlight, middletone, and shadow values in color or black-and-white reflection copy. In addition, they are ideal for Three-Aim Point Control methods for reproducing color reflection copy with traditional masking and color separation procedures.

To use the gray scale:

1. With a reflection densitometer calibrated to ANSI specifications, read the density values of each of the patches of the gray scale. Record your readings.
 - If you do not calibrate to a check plaque, then "Zero" (null) the densitometer to the "white" A-patch.
2. Place the gray scale alongside the image you are reproducing. Make your exposures.
3. With the same reflection densitometer, read the density values of each of the patches of the *reproduced* gray scale. Record your readings.
4. a. By comparing **successive** images of the gray scale, you can tell if changes have occurred in your exposure/printing conditions. With 0.10 density *shift* equaling 1/3 of a stop of *change*:
 - If density **increases** by 0.10 (1 step darker), then exposure/printing conditions have increased 1/3 of a stop. Decrease exposure by 1/3 of a stop to compensate.
 - If density **decreases** by 0.10 (1 step lighter), then exposure/printing conditions have decreased 1/3 of a stop. Increase exposure by 1/3 of a stop to compensate.b. On a sheet of graph paper, plot the values obtained in Step 1 above on the **horizontal** axis; plot the values obtained in Step 3 on the **vertical** axis. When you connect the plots, the resulting curve is a *tone reproduction curve*.

If you use this gray scale often, we suggest that you replace it with a new one on a regular schedule, approximately once a month.

The TIFFEN Color Control Patches

TIFFEN Color Control Patches help the user compare the color of the subject with known printing colors. They also help the graphic arts camera or scanner operators identify color separation negatives and positives for color reproduction processes.

To provide a repeatable reference, these patches are printed using accredited SWOP™ (Specification Web Offset Publications) inks on Kimdura stock (not a SWOP specification). Solid ink densities are within SWOP high-low targets. Solid colors include the single colors and two-color overprints of the SWOP chromatic colors, plus a single-color black. Also included is a three-color combination of equal values of cyan, magenta, and yellow to differentiate a three-color black from the single-color black. The lighter colors represent a press result equaling nominal quartertones with an aim of 25%. As with the gray scale, the background approximates an 18% neutral gray to neutralize flare and adjacency effects.

To use the color patches for color-separation work:

1. Place the color patches and gray scale next to your reflection copy, making sure you include them in your film size for reproduction. Make your exposures with recommended red, green and blue separation filters.
2. Compare the color patches of each of the three color-printing negatives (or positives).
3. Film **negatives** will appear *light* or clear where ink is to be printed, and *dark* where no ink is to be printed. Film **positives** will be just the opposite.

These patches are uncoated and are, therefore, subject to scuffing and abrasion. If you use them often, then we suggest replacing them on a regular basis, approximately once a month.