

# Color quality guide

The Color quality guide helps users understand how operations available on the printer can be used to adjust and customize color output.

## Quality menu

Use	To
<b>Print Mode</b> Color Black Only	Specify whether images are printed in black and white or in color.  <b>Notes:</b> <ul style="list-style-type: none"> <li>• Color is the factory default setting.</li> <li>• The printer driver is capable of overriding this setting.</li> </ul>
<b>Color Correction</b> Auto Off Manual	Adjust the color output on the printed page.  <b>Notes:</b> <ul style="list-style-type: none"> <li>• Auto is the factory default setting. Auto applies different color conversion tables to each object on the printed page.</li> <li>• Off turns off color correction.</li> <li>• Manual allows customization of the color tables using the settings available in the Manual Color menu.</li> <li>• Due to the differences in additive and subtractive colors, certain colors that appear on computer monitors are impossible to duplicate on the printed page.</li> </ul>
<b>Print Resolution</b> 1200 dpi 4800 CQ	Specify the printed output resolution in dots per inch or color quality (CQ).  <b>Note:</b> 4800 CQ is the factory default setting.
<b>Toner Darkness</b> 1–5	Lighten or darken the printed output.  <b>Notes:</b> <ul style="list-style-type: none"> <li>• 4 is the factory default setting.</li> <li>• Selecting a smaller number can help conserve toner.</li> <li>• If Print Mode is set to Black Only, then a setting of 5 increases toner density and darkness to all print jobs.</li> <li>• If Print Mode is set to Color, then a setting of 5 is the same as a setting of 4.</li> </ul>
<b>Enhance Fine Lines</b> On Off	Enable a print mode preferable for files such as architectural drawings, maps, electrical circuit diagrams, and flow charts.  <b>Notes:</b> <ul style="list-style-type: none"> <li>• Off is the factory default setting.</li> <li>• To set Enhance Fine Lines from the software program, with a document open, click <b>File &gt; Print</b>, and then click <b>Properties, Preferences, Options, or Setup</b>.</li> <li>• To set Enhance Fine Lines using the Embedded Web Server, type the printer IP address in a Web browser.</li> </ul>

Use	To
<b>Color Saver</b> On Off	Reduce the amount of toner used for graphics and images. The amount of toner used for text is not reduced. <b>Notes:</b> <ul style="list-style-type: none"> <li>• Off is the factory default setting.</li> <li>• On overrides Toner Darkness settings.</li> </ul>
<b>RGB Brightness</b> -6 to 6	Adjust brightness in color outputs. <b>Notes:</b> <ul style="list-style-type: none"> <li>• 0 is the factory default setting.</li> <li>• This does not affect files where CMYK color specifications are being used.</li> </ul>
<b>RGB Contrast</b> 0–5	Adjust contrast in color outputs. <b>Notes:</b> <ul style="list-style-type: none"> <li>• 0 is the factory default setting.</li> <li>• This does not affect files where CMYK color specifications are being used.</li> </ul>
<b>RGB Saturation</b> 0–5	Adjust saturation in color outputs. <b>Notes:</b> <ul style="list-style-type: none"> <li>• 0 is the factory default setting.</li> <li>• This does not affect files where CMYK color specifications are being used.</li> </ul>
<b>Color Balance</b> Cyan -5 to 5 Magenta -5 to 5 Yellow -5 to 5 Black -5 to 5 Reset Defaults	Adjust color in printed output by increasing or decreasing the amount of toner used for each color. <b>Note:</b> 0 is the factory default setting.
<b>Color Samples</b> sRGB Display sRGB Vivid Display—True Black Vivid Off—RGB US CMYK Euro CMYK Vivid CMYK Off—CMYK	Print sample pages for each of the RGB and CMYK color conversion tables used in the printer. <b>Notes:</b> <ul style="list-style-type: none"> <li>• Selecting any setting prints the sample.</li> <li>• Color samples consist of a series of colored boxes along with the RGB or CMYK combination that creates the color observed. These pages can be used to help decide which combinations to use to get the desired printed output.</li> <li>• From a browser window, type the IP address of the printer to access a complete list of color sample pages from the Embedded Web Server.</li> </ul>

Use	To
<p><b>Manual Color</b></p> <p>RGB Image</p> <p>Vivid</p> <p>sRGB Display</p> <p>Display True Black</p> <p>sRGB Vivid</p> <p>Off</p> <p>RGB Text</p> <p>Vivid</p> <p>sRGB Display</p> <p>Display True Black</p> <p>sRGB Vivid</p> <p>Off</p> <p>RGB Graphics</p> <p>Vivid</p> <p>sRGB Display</p> <p>Display True Black</p> <p>sRGB Vivid</p> <p>Off</p>	<p>Customize the RGB color conversions.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• sRGB Display is the factory default setting for RGB Image. This applies a color conversion table to an output that matches the colors displayed on a computer monitor.</li> <li>• sRGB Vivid is the factory default setting for RGB Text and RGB Graphics. sRGB Vivid applies a color table that increases saturation. This is preferred for business graphics and text.</li> <li>• Vivid applies a color conversion table that produces brighter, more saturated colors.</li> <li>• Display True Black applies a color conversion table that uses only black toner for neutral gray colors.</li> <li>• Off turns off color conversion.</li> </ul>
<p><b>Manual Color</b></p> <p>CMYK Image</p> <p>US CMYK</p> <p>Euro CMYK</p> <p>Vivid CMYK</p> <p>Off</p> <p>CMYK Text</p> <p>US CMYK</p> <p>Euro CMYK</p> <p>Vivid CMYK</p> <p>Off</p> <p>CMYK Graphics</p> <p>US CMYK</p> <p>Euro CMYK</p> <p>Vivid CMYK</p> <p>Off</p>	<p>Customize the CMYK color conversions.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• US CMYK is the US factory default setting. US CMYK applies a color conversion table that tries to produce output that matches SWOP color output.</li> <li>• Euro CMYK is the international factory default setting. Euro CMYK applies a color conversion table that tries to produce output that matches EuroScale color output.</li> <li>• Vivid CMYK increases color saturation for the US CMYK color conversion table.</li> <li>• Off turns off color conversion.</li> </ul>
<p><b>Color Adjust</b></p>	<p>Initiate a recalibration of color conversion tables and to allow the printer to make adjustments for color variations in output.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• Calibrating starts when the menu is selected. <b>Calibrating</b> appears on the display until the process is finished.</li> <li>• Color variations in output sometimes result from changeable conditions such as room temperature and humidity. Color adjustments are made on printer algorithms. Color alignment is also recalibrated in this process.</li> </ul>

## FAQ about color printing

### What is RGB color?

Red, green, and blue light can be added together in various amounts to produce a large range of colors observed in nature. For example, red and green can be combined to create yellow. Televisions and computer monitors create colors in this manner. RGB color is a method of describing colors by indicating the amount of red, green, or blue needed to produce a certain color.

### What is CMYK color?

Cyan, magenta, yellow, and black inks or toners can be printed in various amounts to produce a large range of colors observed in nature. For example, cyan and yellow can be combined to create green. Printing presses, inkjet printers, and color laser printers create colors in this manner. CMYK color is a method of describing colors by indicating the amount of cyan, magenta, yellow, and black needed to reproduce a particular color.

### How is color specified in a document to be printed?

Software programs typically specify document color using RGB or CMYK color combinations. Additionally, they allow users to modify the color of each object in a document. For more information, see the software program Help topics.

### How does the printer know what color to print?

When a user prints a document, information describing the type and color of each object is sent to the printer. The color information is passed through color conversion tables that translate the color into the appropriate amounts of cyan, magenta, yellow, and black toner needed to produce the desired color. The object information determines the application of color conversion tables. For example, it is possible to apply one type of color conversion table to text while applying a different color conversion table to photographic images.

### Why doesn't the printed color match the color I see on the computer screen?

The color conversion tables used in Auto Color Correction mode generally approximate the colors of a standard computer monitor. However, because of technology differences that exist between printers and monitors, there are many colors that can also be affected by monitor variations and lighting conditions. For recommendations on how the printer color sample pages may be useful in solving certain color-matching problems, see the question, "How can I match a particular color (such as a corporate logo)?"

### The printed page appears tinted. Can I adjust the color?

Sometimes a printed page may appear tinted (for example, everything printed seems to be too red). This can be caused by environmental conditions, paper type, lighting conditions, or user preference. In these instances, adjust the Color Balance setting to create a more preferable color. Color Balance provides the user with the ability to make subtle adjustments to the amount of toner being used in each color plane. Selecting positive or negative values for cyan, magenta, yellow, and black (from the Color Balance menu) will slightly increase or decrease the amount of toner used for the chosen color. For example, if a printed page has a red tint, then decreasing both magenta and yellow could potentially improve the color balance.

### My color transparencies seem dark when they are projected. Is there anything I can do to improve the color?

This problem most commonly occurs when projecting transparencies with reflective overhead projectors. To obtain the highest projected color quality, transmissive overhead projectors are recommended. If a reflective projector must be used, then adjusting the Toner Darkness setting to 1, 2, or 3 will lighten the transparency. Make sure to print on the recommended type of color transparencies.

### What is manual color correction?

When manual color correction is enabled, the printer employs user-selected color conversion tables to process objects. However, Color Correction must be set to Manual, or no user-defined color conversion will be implemented. Manual color correction settings are specific to the type of object being printed (text, graphics, or images), and how the color of the object is specified in the software program (RGB or CMYK combinations).

**Notes:**

- Manual color correction is not useful if the software program does not specify colors with RGB or CMYK combinations. It is also not effective in situations in which the software program or the computer operating system controls the adjustment of colors.
- The color conversion tables—applied to each object when Color Correction is set to Auto—generate preferred colors for the majority of documents.

To manually apply a different color conversion table:

- 1 From the Quality menu, select **Color Correction**, and then select **Manual**.
- 2 From the Quality menu, select **Manual Color**, and then select the appropriate color conversion table for the affected object type.

**Manual Color menu**

Object type	Color conversion tables
RGB Image RGB Text RGB Graphics	<ul style="list-style-type: none"> <li>• <b>Vivid</b>—Produces brighter, more saturated colors and may be applied to all incoming color formats.</li> <li>• <b>sRGB Display</b>—Produces an output that approximates the colors displayed on a computer monitor. Black toner usage is optimized for printing photographs.</li> <li>• <b>Display—True Black</b>—Produces an output that approximates the colors displayed on a computer monitor. Uses only black toner to create all levels of neutral gray.</li> <li>• <b>sRGB Vivid</b>—Provides an increased color saturation for the sRGB Display color correction. Black usage is optimized for printing business graphics.</li> <li>• <b>Off</b>—No color correction is implemented.</li> </ul>
CMYK Image CMYK Text CMYK Graphics	<ul style="list-style-type: none"> <li>• <b>US CMYK</b>—Applies color correction to approximate the SWOP (Specifications for Web Offset Publishing) color output.</li> <li>• <b>Euro CMYK</b>—Applies color correction to approximated EuroScale color output.</li> <li>• <b>Vivid CMYK</b>—Increases the color saturation of the US CMYK color correction setting.</li> <li>• <b>Off</b>—No color correction is implemented.</li> </ul>

**How can I match a particular color (such as a corporate logo)?**

From the printer Quality menu, nine types of Color Samples sets are available. These are also available from the Color Samples page of the Embedded Web Server. Selecting any sample set generates a multiple-page printout consisting of hundreds of colored boxes. Either a CMYK or RGB combination is located on each box, depending on the table selected. The observed color of each box is obtained by passing the CMYK or RGB combination labeled on the box through the selected color conversion table.

By examining Color Samples sets, a user can identify the box whose color is the closest to the desired color. The color combination labeled on the box can then be used for modifying the color of the object in a software program. For more information, see the software program Help topics. Manual color correction may be necessary to utilize the selected color conversion table for the particular object.

Selecting which Color Samples set to use for a particular color-matching problem depends on the Color Correction setting being used (Auto, Off, or Manual), the type of object being printed (text, graphics, or images), and how the color of the object is specified in the software program (RGB or CMYK combinations). When the printer Color Correction setting is set to Off, the color is based on the print job information; and no color conversion is implemented.

**Note:** The Color Samples pages are not useful if the software program does not specify colors with RGB or CMYK combinations. Additionally, certain situations exist in which the software program or the computer operating system adjusts the RGB or CMYK combinations specified in the program through color management. The resulting printed color may not be an exact match of the Color Samples pages.

### **What are detailed Color Samples and how do I access them?**

Detailed Color Samples sets are available only through the Embedded Web Server of a network printer. A detailed Color Samples set contains a range of shades (displayed as colored boxes) that are similar to a user-defined RGB or CMYK value. The likeness of the colors in the set are dependent on the value entered in the RGB or CMYK Increment box.

To access a detailed Color Samples set from the Embedded Web Server:

**1** Type the printer IP address or host name in the address field of your Web browser.

**Note:** If you do not know the IP address or host name of the printer, then you can:

- View the information on the printer control panel home screen, or in the TCP/IP section under the Networks/Ports menu.
- Print a network setup page or menu settings page and locate the information in the TCP/IP section.

**2** Click **Configuration > Color Samples > Detailed Options**.

**3** Select a color conversion table.

**4** Enter the RGB or CMYK color number.

**5** Enter an increment value from 1–255.

**Note:** The closer the value is to 1, the narrower the color sample range will appear.

**6** Click **Print**.