

## Printing in Black & White

<u>Application:</u> Adobe Illustrator CS <u>Printer:</u> HP Designjet 30/130 series printers <u>Software</u>: HP Software RIP <u>Operating System:</u> Mac OS X



The simplest approach to creating a black and white image is taking a color image and converting it to grayscale in an imaging program such as Photoshop or Illustrator. In addition, although converting an image from color to grayscale is easy, the opposite operation is complex, in this case it is better to have it in color in the first place.

There are different ways to print a black and white image, normally once the colors are converted to grayscale, the black in the highlights and midtones is substituted for color inks. This occurs because a six-color printer with light colorants (a CMYKcm configuration) is unbalanced in the sense that the darkest ink, K (black), does not have a light counterpart like the C (cyan) and M (magenta) inks. As a result, K ink must not be used in highlighted image areas in order to prevent a grainy appearance. But, while you gain in print quality you lose in the neutrality of black.

This guide is focused to achieve a neutral black in the print, avoiding the black substitution.

- 1. First recommendations:
  - See the <u>Media type functionality & features</u> and choose the most appropriate media.
  - It is essential to have the media type correctly calibrated with this printer and print mode, consult the <u>Calibrate my printer</u> section.
- 2. Open Adobe Illustrator CS.
- 3. Configure the Color Settings, Edit menu > Color Settings...:
  - Make sure the Advanced Mode check box is ticked.
  - Working Space > RGB: Adobe RGB (1998).
  - Working Space > CMYK: Euroscale Coated v2 (for Europe), U.S. Web Coated (SWOP) v2 (for US) and Japan Standard v2 (for Japan).
  - Color Management Policies: Preserve the Embedded Profiles.
  - Profile Mismatches: check Ask When Opening and Ask When Pasting.
  - Missing Profiles: check Ask When Opening.
  - Conversion Options > Intent: Perceptual (for RGB images) or Relative Colorimetric (for CMYK images).

	Color Settings	
Settings: (	Custom	ОК
Advance	d Mode	Cancel
- Working	Spaces	
RGB:	Adobe RGB (1998)	Load
CMYK:	Euroscale Coated v2	Save
- Color Ma	nagement Policies	
RGB:	Preserve Embedded Profiles	
CMYK:	Preserve Embedded Profiles	
	lismatches: ☑ Ask When Opening ☑ Ask When Pasting ng Profiles: ☑ Ask When Opening	
- Conversi	on Options	_
Engine:	Adobe (ACE)	
Intent:	Perceptual	
🗹 Use B	lack Point Compensation	
Description	8 	

• Click **OK** 

- 4. Open the image, **File menu > Open**...:
  - If the document has an embedded color profile that does not match the current working space, select **Use the embedded profile**. Otherwise, select **Assign working space**.

	The document's embedded color profile does not match the curren RGB working space.
1	Embedded: sRGB IEC61966-2.1
	Working: Adobe RGB (1998)
1	How do you want to proceed?
	Use the embedded profile (instead of the working space)
	$\bigcirc$ Convert the document's colors to the current working space
	O Discard the embedded profile (don't color manage)

	Missing Profile	
How do you want to		
O Assign profile:	Adobe RGB (1998)	•
		Cancel OK

- Click OK
- 5. If you place an image, you can embed the image in the document. If it has an embedded profile, it will be converted from the embedded color profile to the document color profile preserving the color appearance. If it doesn't have an embedded color profile, Illustrator will assign the document color profile.
  - File menu > Place...: browse the image and uncheck the Link checkbox. If you are asked How do you want to treat the data?, select Convert.

Paste Profile Mismatch
The source data's color profile does not match the destination document's color profile.
Source: sRGB IEC61966-2.1
Destination: Adobe RGB (1998)
How do you want to treat the data?
<ul> <li>Convert (preserve color appearance)</li> </ul>
O Don't Convert (preserve color numbers)

- Click OK.
- 6. Make sure you have configured the **Document Setup** appropriately for your document, **File menu > Document Setup...**.
- 7. RIP settings, File menu > Print...:
  - Printer: Select the printer (ex. hp\_designjet\_130\_RIP).
  - Page Setup...:
    - Format for: Select the printer.
    - **Paper Size**: Select the paper size of the media loaded on the printer.
    - **Orientation:** Select the orientation of your image on the paper.
    - o Click OK.
  - Printer... button:
    - **Printer Features > Media Options** (Mac OS X v10.3):
      - Select the Media Type that is loaded on the printer (always calibrated).
      - Print Mode: Best (always calibrated).

	Print
Printer:	hp_designjet_130_RIP_Unkno
Presets:	Standard
	Printer Features
	Feature Sets: Media Options
Media Type: HP	Premium Plus Photo and Proofing Gloss 🛟
Print Mode: Bes	st 🔹

- Printer Features > Color Options (Mac OS X v10.3):
  - Uncheck **Print in Grayscale**.
  - Uncheck **Perform Color Correction**.

hp_designjet_	130_RIP	•	
(c) 1 1			
Standard		•	
Printer Feature	25	•	
eature Sets: C	olor Options 1	•	
tion curves when Correction le: N/A		•	
	eature Sets: Co cale ntone calibration	ntone calibration tion curves when printing Correction le: N/A	Feature Sets: Color Options 1

- Click **Print**.
- 8. Adobe Illustrator **Print...** settings:
  - General (left hand menu):
    - **Media > Size:** Defined by Driver.
    - **Options:** Select the scaling option you need.

- **Output** (left hand menu):
  - Mode: Composite.
- Color Management (left hand menu):
  - **Print Space > Profile**: Dot Gain 30%.
  - **Print Space > Intent**: Perceptual.

	Print	3
Print Preset:	Custom	
Printer:	hp_designjet_130_RIP_UnknownMac	
PPD:	Default (HP designjet 130 RIP)	
Setup Marks & Bleed Output Craphics Color Management Advanced Summary	or Management ource Space RGB IEC61966-2.1 rint Space rofile: Dot Gain 30% ntent: Perceptual	
Page Setup	Save Preset) Cancel Print Done	

• Click **Print.** 

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www.hp.com/go/designjet

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