EPSON STYLUS PRO WT7900

Epson Stylus Pro WT7900 printer

EFI XF 4.1 supports the Epson Stylus Pro WT7900 (24 inch) printer, the first conventional water-based, white-ink inkjet printer. The driver is available in contone as well as with halftone dithering, which is useful in conjunction with the OneBit Option.

Epson has developed a special media for this kind of printer, which uses a new technology for white color impression. The printer uses ultrachrome ink with the same set of inks for the slots as the Epson Stylus Pro WT7900/9900 series printers, but without matte, light and light light black inks. One of the slots is used instead for the white ink cartridge, the other two for a cleaning fluid. When the printer is switched off, an automatic cleaning procedure starts, which substitutes the white ink with cleaning fluid to avoid the nozzles clogging up when the printer is not in use.

Ink technology

Normally, white ink uses TITAN Bi Oxid (Ti02) for the white pigment, which is relatively heavy, so the ink particles can sink down to the bottom of the cartridge. For the Stylus Pro WT7900, Epson invented a new technology. Small hollow resin particles are used to create white ink, whereby the impression of color comes from light scattering. To prevent sedimentation of the white particles it is recommended that the inks are shaken once a week. A warning appears on the printer's control panel once a week to remind you.

Supported media

Epson provides three media with special ink-absorbing layers.

Epson ClearProof Film

Epson ClearProof Film has a thickness of 0.12 mm without a separate film and weighs 156g/m²). It is a clear film with a white foil on the reverse side, which helps the device to detect the media and prevents the media from scratching. The foil is removed once the printout has dried. Try sticking a piece of tape to one corner of the media to help you detach the foil.

Epson CrystalClear Film

Epson CrystalClear Film has a white sheet behind the media to help the device to detect the media. After cutting it is automatically removed.

Proof and photo paper

For normal reflective proofs there are three media types:

- Epson Premium Glossy Photo Paper
- Epson Proofing Paper White Semimatt
- Epson Proofing Paper Commercial

The results are not as smooth as those achieved on other printers, as the light and light light black inks are missing. However, for proofing purposes, the smoothness is perfectly adequate.

Output printer resolution modes

The available output resolution modes depend on which media type is used.

Media type	Resolution (dpi)		
	720 x 720	720 x 1440	1440 x 1440
Epson ClearProof Film		x	x
Epson Chrystallization Film		x	x
Epson Premium Glossy Photo Paper	x	x	
Epson Premium Glossy Photo Paper (250g/m²)	x	x	
Epson Proofing Paper White Semimatt	x	x	x
Epson Proofing Paper Commercial	x	x	x

Printing with white ink

This section describes the settings available for white ink printing.

Output tab > Special pane

As white ink takes some time to dry (approx. thirty minutes), the following cutter settings are recommended:

- Set the cutter to "Auto cut on" when using the basket for Epson special film.

- Set the cutter to "Auto cut off" when not using the basket to prevent the risk of the media surface being scratched when it lands on the ground.

Manually cut media produces less waste. In the case of Epson ClearProof Film or Epson CrystalClear Film, the auto-cut setting cuts the media 420 mm after the printed image. For all other media, the gap between printed image and cut is 80 mm.

Place manually cut printouts on a table to dry completely. When Epson film is drying, there is an interesting visible effect: the ink is transparent when still wet. This is because wet media has a different refraction index and less scattering than dry media.

Be aware that even dry media remains sensitive to scratching.

Print mode

Four print modes are available for white ink printing:

Spot color WHITE_INK:
The spot color channel is printed in white if it has the name "WHITE_INK".

Inked Image:
The parts of the print job that have already been printed are given a layer of white ink on the back.

Bounding box:
The complete frame is filled with white as a background color. This setting is useful for the linearization process.

⚠ The white ink is not fully opaque, so the background shimmers through the color patches when they are measured. (The visual density of the white is around D=0.3, which means that only 50% of the incoming light is scattered and reflected back to the eye.) It is important to bear this in mind when measuring media wedges too, as the media behind the target to be measured can affect the result by up to 50%.

Off:
No white will be used. This setting can be useful when printing on film media for transmission.

⚠ To print white as a spot color, the spot color must have the name "WHITE_INK". If the white channel has a different name, it is possible to change it directly on the Spot Colors pane. On the Spot Colors pane, first select "PRINTER" in the "Source" column and then map it to the spot color "WHITE_INK".

**Mapping a spot color to WHITE_INK**
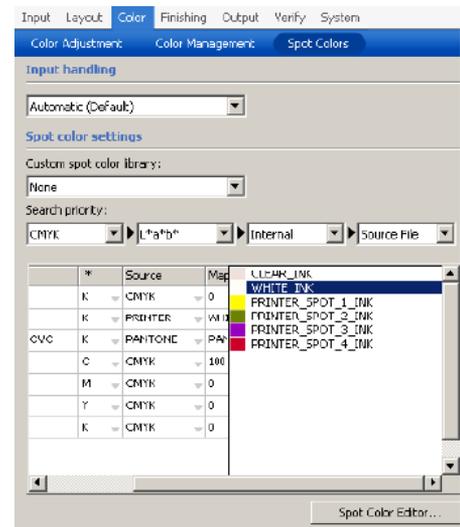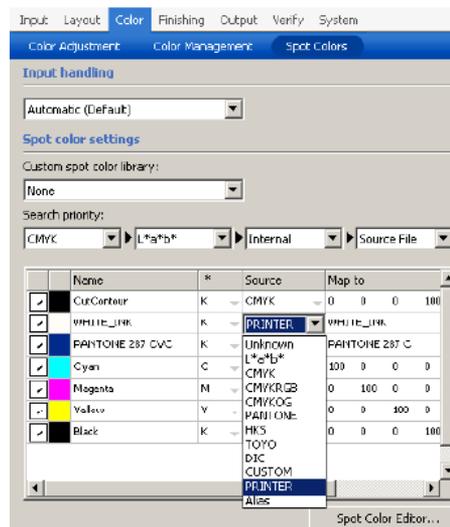
White ink coverage

Normally the white ink coverage is set to "Standard" (=100%). The visual density, which can be measured with a transmission densitometer, shows D= 0.3. It is possible to apply a different setting, but be careful when using more than 100%, as the amount of liquid increases and the total ink limit may be reached.

White ink coverage
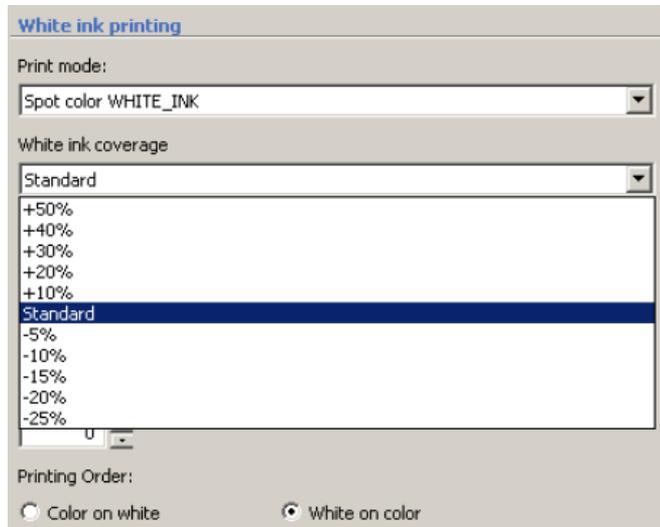
Using the visual correction feature in Color Manager it is possible to change the white ink behavior using a curve like the one below:

Visual correction curve
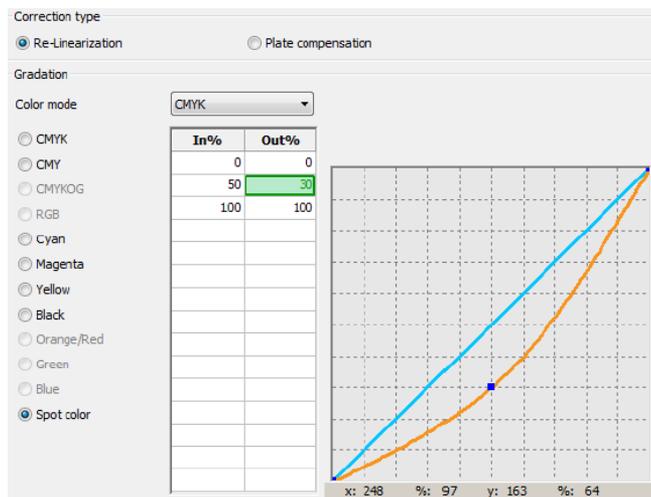
After creating the visual correction file (*.vcc), go to System Manager and select it on the Media pane of the Device tab.

Printing order

There are two possible settings for defining the printing order: "Color on white" and "White on color".

"Color on white" prints first the white and then the color on top, causing the white ink to act as a paper white.

"White on color" is the recommended setting for printing on clear film media. This actually has the same effect as "White on color" as clear film is viewed from the reverse side. Using this setting protects the vivacity of the output colors and also results in a higher contrast.

The printout is automatically mirrored when "White on color" is the chosen setting.

White tinting with CMYK

This setting enables you to simulate a particular white tint by adding a percentage (max. 20%) of CMYK inks.

Opacity simulation with white

Both available Epson Film media are highly transparent. You can use the opacity simulation setting to simulate a more opaque media. A maximum of 20% opacity can be achieved with this setting.

Gamut and media wedges

EFI supports media wedges with white backing. Keep in mind that the white is not completely opaque, so the background paper is important for your measurement.

The diagrams below compares the gamut of Epson media (red line) with that of isocoated v2 (blue line).
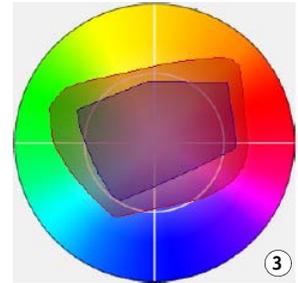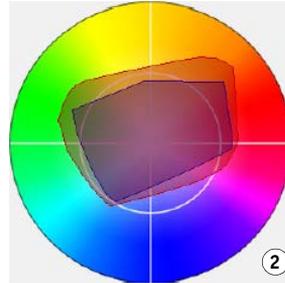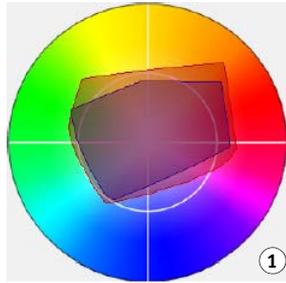
Gamut comparison (L=75)

1   HT ClearProofFilm
    1440 x 1440 dpi (reverse)
2   CT ClearProofFilm
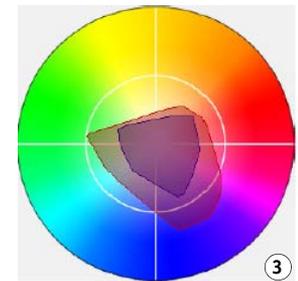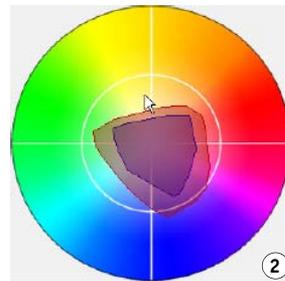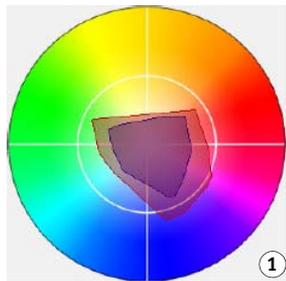   1440 x 1440 dpi (reverse)
3   CT Glossy Paper
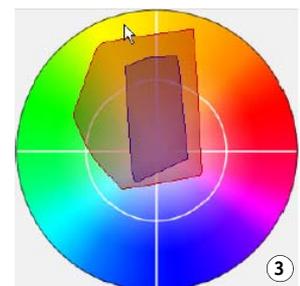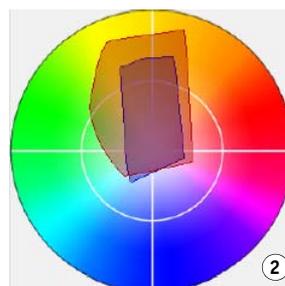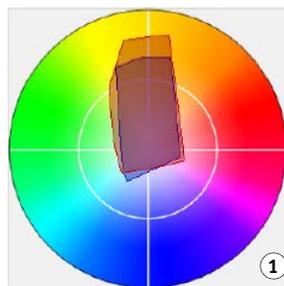
Gamut comparison (L=50)

1   HT ClearProofFilm
    1440 x 1440 dpi (reverse)
2   CT ClearProofFilm
    1440 x 1440 dpi (reverse)
3   CT Glossy Paper

Gamut comparison (L=25)

1   HT ClearProofFilm
    1440 x 1440 dpi (reverse)
2   CT ClearProofFilm
    1440 x 1440 dpi (reverse)
3   CT Glossy Paper

None of the settings on the Special pane are saved to the epl or profile. This means that you have no way of knowing which conditions existed at the time the profile was created. To overcome this problem, consider renaming the media to include easily recognizable abbreviations of the important settings.