EPSON SureColor V7000 Supplement

This document describes the supported features and options of the EPSON SureColor V7000 printer driver for Fiery XF.

Supported printers

- EPSON SureColor SC-V7000 Series

Supported OS

- Windows 64

License

You require a license for the Printer Option Group 6

Technical specifications

Item	SureColor SC-V7000
Print head	TFP Print Head 360dpi base (1440 nozzles / color ink, 5760 nozzles / white and varnish ink)
Printer table	2.5m x 1.25m (width x depth)
Ink set	C / M / Y / BK / LC / LM / GY / R / WH / Vr UltraChrome UV ink
Print resolution	360x720dpi 720x720dpi 720x1080dpi 720x1440dpi
Layer print	color white varnish color + white color + varnish white + varnish color + white + varnish color + white + color color + white + color + varnish color + white + white + color color + white + white + color + varnish color + white + blockout + white + color color + white + blockout + white + color + varnish

Connection

Print data is sent to the printer through the UV Flatbed Controller (UVFC). UVFC runs on the control PC (Windows). Two ways of communication are possible:
- File output to Windows folder or share (where UVFC can pick up the file)
- Print via TCP port 9100 to the IP address of the computer where UVFC is running

Color mode

- CMYK (Fiery XF) => CMYKRcmk+w+v (printer)

Ink configuration

- EPSON UltraChrome UV ink

Media source

- Rigid media (Flatbed)
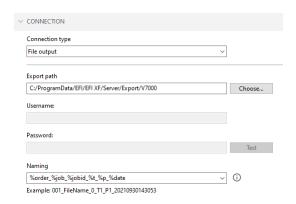
Setting up the printer in Fiery XF

Set up the printer in Server Manager to

- either use the **File output** option to generate a *.prn file at the input folder of the UVFC. This is the default.

- or use the **Print via IP network** option to print to the UVFC at the IP address of the PC that is connected to the printer.

In both cases the jobs will appear in the task list on the left side of the UVFC window.

File Output

The Fiery XF server and Command WorkStation are normally installed on the printer PC. The preferred workflow when printing to the printer is the so-called RIP-then-print workflow where the Fiery XF server is configured for file output.

When set up this way, the Fiery XF server RIPs the job and creates a *.prn file. Use the printer software to select the *.prn file and print the job.

File Output over network

If you run Fiery XF on a separate computer, e.g. EFI proServer, the following is required:
- On the printer computer, setup a share, e.g. \\computername\V7000.One user must have write access to the share and to the local folder that is shared. Note down the user's credentials (username, password).
- In Fiery XF specify
    - The share \\computername\V7000 as export path
    - The credentials of the user mentioned above

Print via IP network

You can also set up the Fiery XF server to RIP the files directly to a certain IP address. When the Fiery XF server and printer software is installed on the same PC, use 127.0.0.1 as the IP address for printing.

If you import a job into Command WorkStation and select the job to be printed, the job will RIP and print on the fly. In this workflow the printer software is not used. There is a risk of the printer stalling if you RIP and print jobs simultaneously.

If the Fiery XF server is running on a different PC, observe the following:

- Set the IP address to the IP address of the printer PC.

- Use UVFC for printing.

- Firewalls, or any other Internet security software, must allow data transfer via the TCP port 9100 (outgoing on the Fiery XF PC, incoming on the printer PC). In Windows 7 and later, the network must be classified as a home or office network on both PCs. Do not select a public network because the Microsoft default security setting blocks communication with port 9100.

Media types and Print modes

The printer supports three media types:
- Non-transparent media
- Transparent media < FrontLit >
- Transparent media < BackLit >

The availability of print modes depends on the media type:

Print mode	Non-transparent	Transparent < FrontLit >	Transparent < BackLit >
High Speed 360x720 (Adj_A)	*		
Speed 720x720 (Adj_A)	*		
Production 720x720 (Adj_A)	*	*	*
Quality 720x1080 (Adj_A)	*	*	*
High Quality 720x1440 (Adj_A)	*	*	*
Fine Production 720x720 (Adj_B)	*	*	*
Fine Standard 720x720 (Adj_C)	*	*	*
Fine Quality 720x720 (Adj_H)	*	*	
Fine Quality 720x1440 (Adj_B)			*
Fine High Quality 720x1440 (Adj_H)	*	*	*

- The properties Adj_A .. Adj_H are an indication of carriage speed
    - For details please refer to the chapter *Adjustment Mode* of the printer's manual.
    - *Fine* Print modes (not Adj_A) do not support varnish printing. In this case the driver generates a separate varnish print task with the print mode **Production 720x720 Vr (Adj_A)**.
- The resolutions in the table are native print resolutions.
- In Fiery XF you can choose contone resolutions which are lower or equal of the native print resolutions:
    - 360x360 supports all print modes
    - 720x720 supports all print modes except **High Speed 360x720 (Adj_A)**.

Multi-Layer Printing

The printer

The UVFC uses the term Print Task for one print action. A .prn file contains one Print Task. One data transfer via TCP/IP is also equivalent to one Print Task.

The SC-V7000 can print up to three layers in one Print Task. This is possible because the white, color and varnish print heads are mounted in three rows. The order of the three layers of a Print Task can be set in the UVFC by setting Y Print Direction:

Y Print Direction	Order	XF Term
Backward	Media – White – Color – Varnish	Varnish on Color on White
Forward	Media – Varnish – Color – White	White on Color on Varnish

Not all three layers need to be active. For example Backward is applicable for "Varnish on Color" and Forward is applicable to "White on Color".

Please see also the chapter *Multi-Layer Printing* of the printer's manual.

Fiery XF

In the simplest case, the printer driver creates one Print Task for each page of the job. In two cases the Fiery XF driver creates multiple Print Tasks for each page:

- If Varnish shall be used with a *Fine* print mode, the driver generates a final Print Task that contains only Varnish and uses the print mode **Production 720x720 Vr (Adj_A)**. UVFC operator may need to choose Adj_A for this Print Task.
- If more than three layers are requested, the driver generates up to four Print Tasks which contain up to six layers in three or four Print Tasks

In file output, each Print Task gets a suffix before ".prn" in the form _L*n*_*layers*, where *n* is the logical number and *layers* is the list of active layers within the Print Task. Some Print Tasks need UVFC operator intervention. The following table gives an overview:

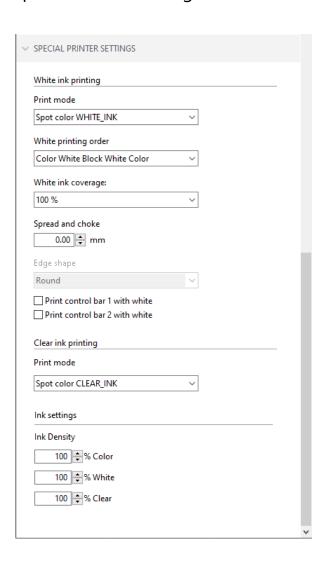| Layers	Print Tasks Adj_A	Print Tasks Fine	Mirror	UVFC operator
color	_L1_C	_L1_C		
white	_L1_CW	_L1_CW		White only
varnish	_L1_CV	_L1_C _L2_V		Varnish only
color + white	_L1_CW	_L1_CW		Optional forward/mirror
color + varnish	_L1_CV	_L1_C _L2_V		
white + varnish	_L1_CWV	_L1_CW _L2_V		White and varnish only
color + white + varnish	_L1_CWV	_L1_CW _L2_V		
color + white + color	_L1_C _L2_CW	_L1_C _L2_CW		
color + white + color + varnish	_L1_C _L2_CWV	_L1_C _L2_CW _L3_V		
color + white + white + color	_L1_CW _L2_CW	_L1_CW _L2_CW	*	L1 forward
color + white + white + color + varnish	_L1_CW _L2_CWV	_L1_CW _L2_CW _L3_V	*	L1 forward
color + white + blockout + white + color	_L1_CW _L2_B _L3_CW	_L1_CW _L2_B _L3_CW	*	L1 forward
color + white + blockout + white + color + varnish	_L1_CW _L2_B _L3_CWV	_L1_CW _L2_B _L3_CW _L4_V	*	L1 forward

For layering with high opacity (mirror column *):
- The first color layer (_L1_C) is mirrored
- The white layer is double mirrored (maximum of original and mirrored white)
- The blockout layer B is a color layer which prints the white image with black ink

Print two different images (color1 + white + blockout + white + color2):
- Make sure they are of same size. This is naturally given for multipage jobs, including multipage nestings.
- Print
    - Job_1_L1_CW
    - Job_2_L2_B
    - Job_2_L3_CWV

Special Printer Settings

White ink printing

Print Mode

Select one of the following print modes:

Print mode	White channel
Off	White is not printed, even if there is an appropriate color separation.
Spot color WHITE_INK	Prints: The spot color that is defined as WHITE_INK in the document. Any color separation from the job that is mapped to WHITE_INK and saved as a spot color table (*.cxf). The spot color table must be selected on the Spot Colors pane. The spot color WHITE_INK is output without color management in Fiery XF.
Fixed ink amount on printed areas*	A white ink dot is created for all pixel information that is not 0,0,0,0,0 (including the spot color WHITE_INK). You can exclude WHITE_INK from the print job on the Spot Colors pane.
Bounding box*	All image pixels are printed in white ink. This is the recommended setting for creating a calibration file.

* "Fixed ink amount on printed areas" and "Bounding box" are applied to separated and composite jobs.

For more information on defining spot colors in Fiery XF, see the Fiery XF online help.

White printing order

Due to the opaque properties of white ink, the print order is important. The settings are applied as follows:

Print order	Description
White Color or Color White	You need to setup *Y Print Direction* in UVFC: *Backward* Prints white as the foundation layer, and then prints color on top. Use this setting for printing on dark or metallic materials. *Forward* Prints white on top of color. Use this setting for printing backlit transparencies. Mirroring can be done in UVFC
Color White Color	Prints white ink as the middle of three layers. In daylight conditions, the top and white layers operate in reflective mode. In the dark, the backlight shines through all three layers. You can adjust the percentage of ink for the top and bottom layers separately. By default, 100% of ink is applied to the top and bottom layers. It is not possible to have a different image on the top and bottom. It is possible to mirror the back layer in UVFC for window-cling applications.
Color White White Color	Color White Color – plus double-strike white for higher opacity.
Color White Block White Color	Color White White Color – plus additional Blockout layer in the middle for maximum opacity. The image of the Blockout layer is the same as the image in the white layers.

White ink coverage

Choose an ink amount factor

Spread and choke

Adjust the white ink area to fix trapping issues, e.g. choke a bit to avoid visible white edges at color edges. Spread a bit to have a defined white frame.

Edge shape

Controls the shape of spread

Print control bar 1 (2) with white

White backing behind control bars can be activated independent from white print mode setting

Clear Ink Printing

Print mode

Same modes as for white except that the spot color channel is CLEAR_INK.

Ink settings

Ink density

Adjust overall ink amount. The values are taken by Color Tools when you start a base linearization and they are embedded into the EPL file (the part of a calibration set which defines print parameters)