

Mid-range Production Roll-to-Roll UV Printer



EFI R3225



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Contents

The Basics	1
Purchasing	3
Structure of the Printer: Media Transport Mechanism	3
Roll-Fed	4
Upgrades	5
Operating the Printer	6
Construction (Build Quality)	7
Set-Up of the Printer: Practical Considerations	8
Warranty & Tech Support	8
Printhead Technology	9
Printhead DPI & Features	9
Substrates	9
Market Intended for this Printer	10
Ink	11
UV Curing Lamps	11
RIP Software	12
General Considerations	12

EFI R3225

A Mid-range Production Roll-to-Roll UV printer



EFI R3225, a 3.2-meter wide dedicated roll-to-roll UV printer at ISA Sign Expo 2012.

THE BASICS

1. Brand name, model?

EFI R3225. This model is developed to fill the gap between the entry-level Rastek, and the industrial production VUTEK. This model is more production oriented than a Rastek, but its price is lower than a VUTEK.

2. If there are two or three (or more) widths of this printer, what differences exist other than the width?

This is a 3.2 meters wide roll-to-roll UV printer and it is the only width so far. If you need a grand-format solution, you could consider the EFI VUTEK GS5000r.

3. What is the nature of the company? Is this company the manufacturer, distributor, or rebranding a machine made by someone else?

EFI is a well known international brand in the wide-format printer industry. Although the company bought VUTEK (Now EFI VUTEK) and Raster Printers (Now EFI Rastek), this new model was designed from the ground up by EFI.

4. What other printers of other brands are comparable?

This model could be compared to the Teckwin TeckPro UV3200, and the new Dilli Neo-Titan RTR 3204D. These two models are in the 3.2-meter range. The Teckwin uses Spectra Polaris, the Dilli uses Konica Minolta heads, but the Dilli is still in beta stage, so it won't be shipping until the end of 2012. Teckwin's reputation suffered in the past due to unresolved technical issues in their printers. However, I see the technology has recuperated and the company has capable in-house distribution via Teckwin USA as well as several years experience of Teckwin for southern USA and adjacent Latin American world via the new top USA Manager, Ryan Buy.

5. When and where was this model first introduced?

The EFI R3225 was officially launched at ISA Sign Expo 2012, but an earlier version was shown at ISA Sign Expo 2011. At that time, the model was introduced as the EFI Rastek 3204. Over that year, EFI engineers worked on some improvements, some of which will be commented further on.

6. Is this printer mature or still in alpha-stage or beta-stage?

As mentioned above, the model introduced at ISA Sign Expo 2011 was a prototype. The current version will begin to be shipped towards the end of the second quarter of 2012.

**EFI Rastek R3204, the Prototype:**

At ISA Sign Expo, EFI introduced an early version, then a prototype, of the current EFI R3225. This early model came with one printhead per color. The new EFI R3225 comes with two heads per color, therefore is more production-oriented than its predecessor. Read further on to see the chart of production times of the EFI R3225.

7. List price?

The estimated list price is US\$159,000 (March 2012). The price of the EFI Rastek R3204 (the prototype shown at ISA 2011) was US\$129,000. The difference in price is due in part to the fact that the current model is more production oriented than the early prototype.

8. What accessories are extra charge? Are these same or similar accessories included with other printers at no extra cost?

The printer will have optional features, but they are still being worked on.

PURCHASING

9. Who are the distributors for this printer in the USA? In what other country(ies) can I find dealers?

EFI has local and regional distributors worldwide. If a specific country is not covered, a distributor in a neighboring city will provide distributorship and service. The official distributor in the United States and several countries in Latin America is Heidelberg.



STRUCTURE OF THE PRINTER: MEDIA TRANSPORT MECHANISM

10. What type of media transport mechanism was this printer designed with?

As you might already know, this is a dedicated roll-to-roll. In EFI's website, you can find a very honest document that lists the applications you can produce with this printers AND the applications you can't produce with this printer.

11. Was this printer made originally as a UV-curable ink printer, or is it retrofitted with UV-curing? If retrofitted, what was the original brand or model?

This printer is made from the ground up to be a UV-cured printer. In fact, almost all of the EFI printers are designed to be UV-cured printers. The only exception is the EFI VUTEk TX3250r, which was designed to use dye-sublimation inks to print on textiles.

ROLL-FED

12. How is media held flat? Vacuum table? Pinch rollers?

The printer has a vacuum system, but there is also a pinch roller system to make sure media is flat once it reaches the print area.

UV-cured printers with pinch roller – grit roller system are classified as hybrid printers, in the sense that –in theory– this type of printer can handle both roll and rigid media, but in reality, pinch rollers cannot move rigid boards adequately. On the other hand, this mechanism works perfectly for roll media. The Matan Barak iQ is a 5-meter roll-to-roll UV printer that uses pinch rollers to move rigid media forward, with an accessory table.

If you want to seriously print on rigid material, you need a combo transport belt, or a dedicated flatbed printer.

13. How is the roll held at the feeding position? On a spindle? On a saddle?

Media rolls are held with a spindle. The maximum weight for the roll is 1,800 lbs. (816.5 Kg).

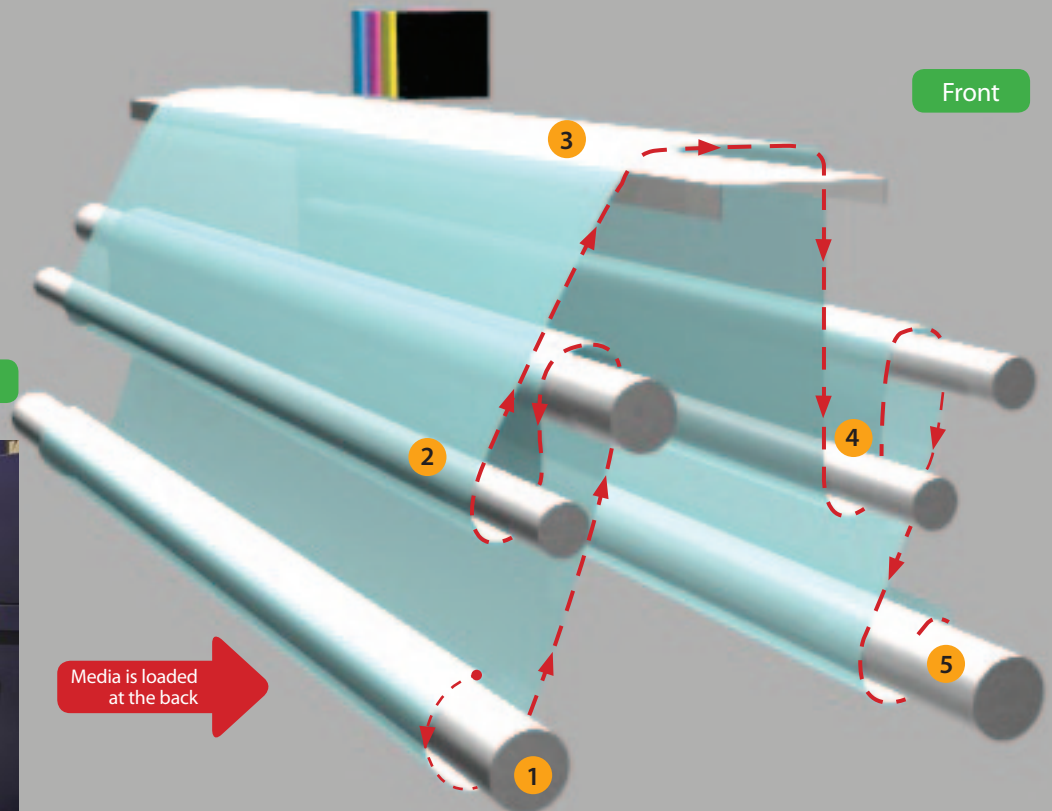
14. How is the roll media handled at feeding position? Dancer bar? Tension bar?

Yes, there is a dancer bar that creates tension in the media to be printed.

Media path diagram: rear view

Media is fed into the printer by a system of tension rollers.

- 1 Media is loaded in a rear spindle
- 2 A dancer bar creates tension
- 3 Media reaches print area
- 4 Front dancer bar creates tension
- 5 Front spindle takes media up



Rear view of the EFI R3225. As you can see in the diagram, media is loaded at the back.

Printing area and take-up system: front view



Although this is a dedicated roll-to-roll, it uses pinch rollers (a) to hold media flat and avoid head strikes.

UPGRADES

15. What features have been added, or changed since the printer first appeared?

One of the most important upgrades is the addition of one head per color. So, the printer is still a four-color printer, but it has two printheads per head. This is why the EFI R3225 is faster than the early prototype.

Other improvements include automatic height adjustment, and automatic head cleaning/purging.

OPERATING THE PRINTER

16. In the main area for operation, is the machine software based (touch screen), or with physical control buttons? Or both?

The machine is totally operated via software, but the screen is not a touch system.

17. Do you get an LCD screen in the printer or other real computer monitor? How big is the screen or monitor?

Yes, you get a full size LCD screen. The difference with the other EFI printers is that the monitor of the EFI R3225 is incrustated in the body of the printer; therefore the position is not user-adaptable.

18. Where does the operator stand or sit?

The main operation area is at the right.

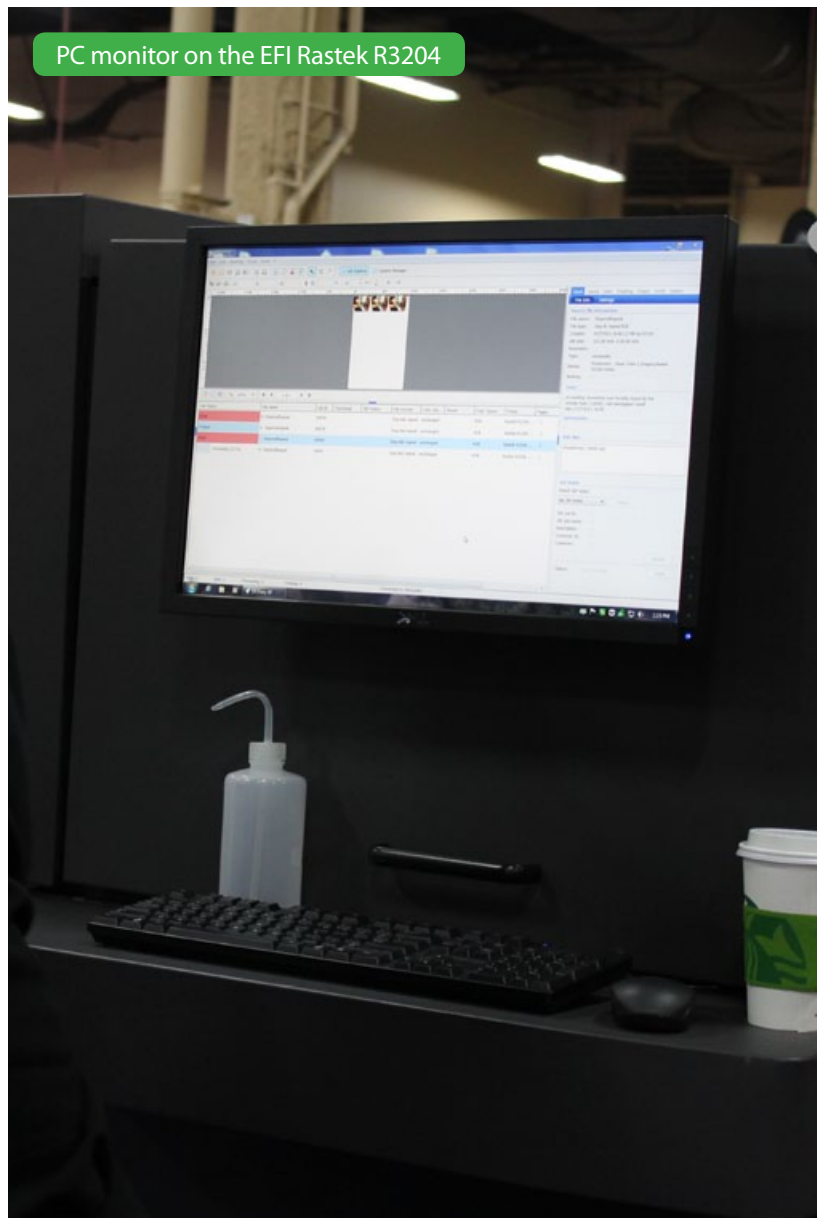


Photo at left: On the EFI Rastek R3204 (prototype at ISA 2011) the monitor is installed on top of the body of the printer.

Photo at right: The monitor on the EFI R3225 (current model at ISA 2012) is incrustated in the body of the printer.

CONSTRUCTION (BUILD QUALITY)

19. What is the solid-ness of the construction of the outer body? Is it plastic? Metal? Heavy gauge?

The printer is made out of metal; it looks sturdy, but lighter than a VUTEk printer.

20. Is there a hood?

Yes. The printer was designed with a hood to protect operators from UV light. However, at trade shows companies usually leave the hood open to show how the printer actually prints.

21. Is there both a front opening for the hood and a back opening?

Yes, you can see open the printer both at the front and at the back.

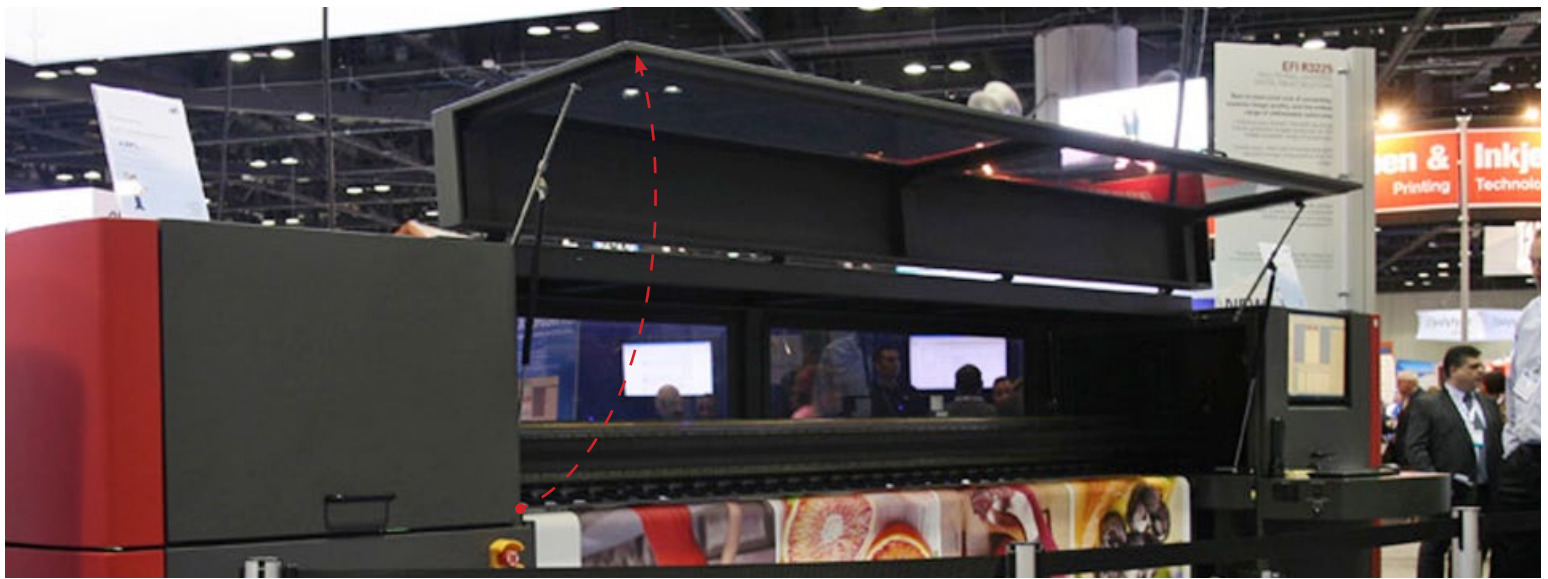


Photo on top, the hood open. Photo below, the hood closed. On a real environment, you can't print unless the hood is closed.

SET-UP OF THE PRINTER: PRACTICAL CONSIDERATIONS

22. What is the size and weight of the printer?

Width (length)	Breadth	Height	Total Weight
214" (544 cm)	39" (100 cm)	59" (150 cm)	3,000 lbs (1,361 kg)

WARRANTY & TECH SUPPORT

23. For how long is the warranty offered?

The warranty covers the first year.

24. Does the warranty cover labor, or only parts?

Yes, warranty covers parts and labor.

25. Does the warranty include printheads?

The warranty covers one printhead per year. This is one of the few printers I have heard of whose warranty also covers printheads.



PRINTHEAD TECHNOLOGY

26. Which brand and model of printhead is used?

Toshiba Tec CE4.

Toshiba Tec's website lists several printhead models: CF1, CE2, CA5, CA4, CA3 and CB1.

I have not yet been able to find information about the CE4 model, but we will be updating this report as soon as we learn more about this print-head model.

27. Is the printhead identified in the spec sheet brochure by brand or also by model, or not at all?

It is not specified in the brochure, but you are clearly told at trade shows about the brand and model.

28. How many total number of printheads?

Eight. Two per color.

29. Does the software use passes or modes to describe quality levels?

Yes, the software defines print quality in the following modes:

Mode	Number of Passes	Resolution	Production
Ultra Quality	18	900 dpi	138 ft ² /hr (12.8 m ² /hr)
High Quality	6	600 dpi	367 ft ² /hr (34.1 m ² /hr)
Quality	4	600 dpi	547 ft ² /hr (50.8 m ² /hr)
Signage	3	450 dpi	720 ft ² /hr (66.9 m ² /hr)
Express	2	300 dpi	939 ft ² /hr (87.2 m ² /hr)

Production Speeds:

Regardless of the printer manufacturer, we tend not to take on account the fastest mode, because in most of the cases you can't really sell the output. But we would need to upgrade our comments based on observing the printer in a sign shop visit.

PRINTHEAD DPI & FEATURES

30. What is the drop size in picoliters?

An important aspect of the Toshiba Tec heads is the capability to produce variable drop sizes (grayscale capability). Among the benefits of grayscale capability is that you don't need light colors (so, no need of light cyan nor light magenta), because a smaller drop size next to a white space creates the optical effect of a lighter tone, which produce softer color transitions and a wider color space.

31. Is there variable droplet capability?

Yes, these Toshiba Tec printheads have grayscale capability.

SUBSTRATES

32. What sizes of material can be printed on?

The printer handles roll media up to 3.2 meters.

33. What thickness can this printer handle?

1mm (0.04").

34. What materials does the manufacturer list?

As mentioned earlier, EFI posted a document in its website, that honestly lists what the printer can and can't print:

What does it print:

- Point-of-Purchase
- Display Graphics
- Tradeshow Graphics
- In-Store Displays
- Floor Graphics
- Window Graphics
- Backlit Graphics
- Outdoor Graphics
- Banners and Sign Graphics
- Flat Surface Vehicle Graphics
- Stage and Theatrical Graphics

What doesn't it print:

- Membrane Switch Graphics
- Industrial Graphics
- Architectural Printing
- Packaging Prototypes
- Lenticular
- Fine Art Reproduction
- White Ink Printing



The nice samples printed on with the R3225 UV printer at ISA Sign Expo 2012 were mostly signage applications.

INK

37. Is there a special ink for flexible material, and another ink for rigid material? What other inksets are available? Is there any choice in inks?

Since this is a dedicated roll-to-roll UV printer, there is only one type of ink.

38. How many colors are used to produce output - four, six, or eight?

So far, the printer comes only with CMYK. Light colors will be available in the future.

39. What company makes the inks?

Keeping in mind that this is neither a VUTEk nor a Rastek printer, we can point out that the EFI VUTEk printers use EFI-branded ink that is co-produced and certified by 3M. On the other hand, EFI Rastek printers use R Series ink that is produced by Toyo.

40. Does the ink come in bottles, boxes, or bags?

Ink comes in 1 and 3.8 liter bottles (0.26 and 1 gallon). The printer comes with a full set of inks, but it is not clear whether it is a 1 liter set or a 3.8 liter set.

41. Can you hot swap the ink (refill with ink while the printer is running)?

Yes, you can pour in new ink while the printer is running. This is one of the upgrades compared to the 2011's version.

UV CURING LAMPS

42. What technology is used in curing lamps: microwave, continuous (mercury arc), LED, or flash (pulsed Xenon)?

The printer uses mercury arc UV lamps. The power of each lamp is variable.

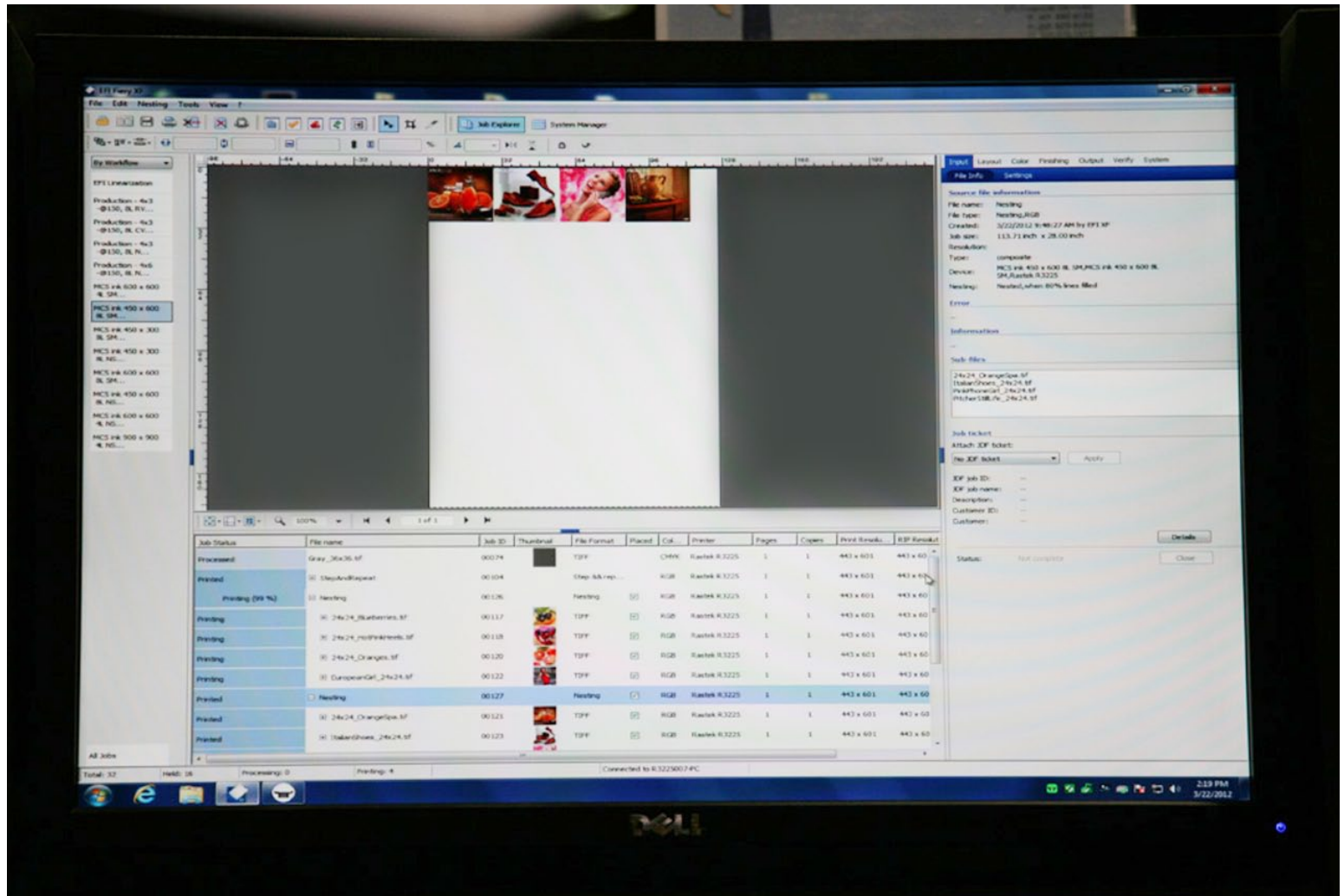


Each material needs a different level of curing intensity. Besides, the possibility to have different power levels in the UV lamps widens the range of results in the final output.

RIP SOFTWARE

43. Which RIPs are featured? Does the price of the printer include a RIP?

The printer comes standard with EFI Fiery XF RIP.



Although it is used only on EFI's printers, the Fiery XF RIP has features that make it as good as most renowned RIP brands.

GENERAL CONSIDERATIONS

44. How many printers of this model are in use; in the USA; in the rest of the world?

As mentioned above, shipping starts around the end of the second quarter, 2012, but considering the reputation of the EFI VUTEk and EFI Rastek printers, it would not be a surprise that this model gains acceptance among printing businesses, especially now that everybody is trying to find a reliable alternative to solvent printers.

Pros:

As expected from EFI, this printer is put together with high quality components.

The production is accelerated by intelligent decisions in the configuration:

- Two heads per color,
- On-the-fly ink refill capability
- Simultaneous (double) files printing capability

As mentioned in the Warranty section, this is one of the few (if not the only) wide-format UV printer in which printheads are covered. Of course, the warranty does not cover the full set of heads, but at least you get one printhead free in any event.

Cons:

The output looks nice, but it would be nice to have light cyan and light magenta as does the Teckwin TeckPro UV3200. But the printheads used in the Teckwin roll-to-roll machine do not have grayscale (variable drop size) capability, as do the Toshiba Tec used in the EFI R3225.

