# DIGITAL FOLDING CARTON? THINK XEIKON!

**Digital folding carton has everything going for it, provided the technology used meets all the market's requirements. With these in mind we have developed our Folding Carton Suite, enabling you to print as well as finish your cartons. And there are at least five good reasons to put this Suite at the top of your list.**

## 1. SHEET AND WEB SOLUTIONS

Depending on your requirements, this Suite lets you build (1) a solution to produce cut sheets ready for conversion, or (2) a web solution delivering your folding cartons on a roll. Our web-fed presses with optional in-built cutter greatly reduce your stock complexity, since they can produce sheets of variable length, without any adjustment to the press. As a result, waste is minimized and, compared to digital sheet-fed presses, your productivity is significantly increased.

## 2. B2 AND BEYOND

This Suite comes with a choice of high-performance digital color presses, with maximum imaging widths, depending on the model, of up to 508 mm (20"). Because Xeikon presses are full rotary with variable repeat length, they have virtually no restrictions on image length. As a result, they can easily accommodate the standard B2 format (50 cm x 70 cm or 20" x 28") and larger (e.g. 50 cm x 100 cm or 20" x 39").

## 3. INLINE SPOT VARNISHING

The Xeikon Web Varnishing Module, one of the components of this Suite, offers you an extremely compact solution to apply aqueous spot varnish or, optionally, UV spot varnish – ideal for folding cartons requiring varnish-free areas for glue strips and production data. It runs inline at full press speed and the varnish roller can be changed easily to match the repeat length or width of the print job. Also, your operator can judge quality and color immediately and make any necessary changes on the fly.
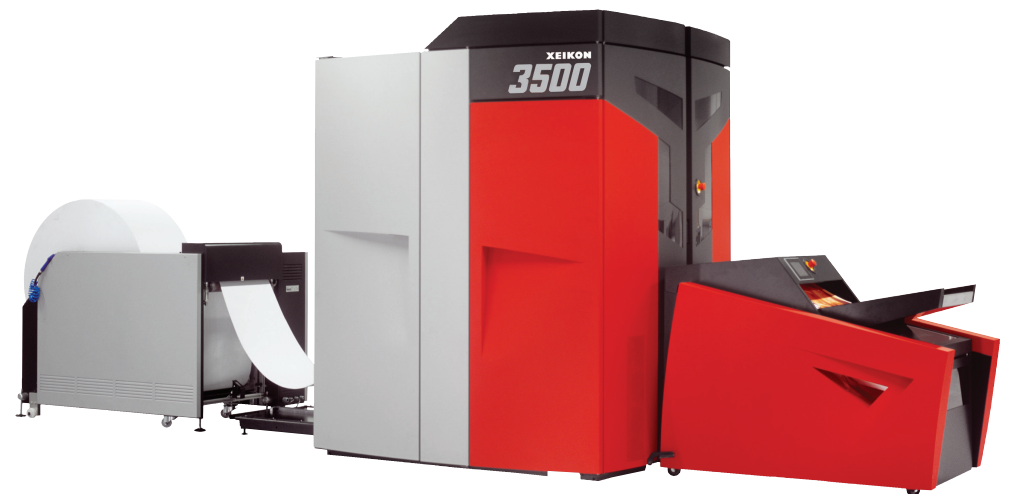
## 4. INDISTINGUISHABLE FROM OFFSET

No matter which Xeikon press you choose, our print quality is indistinguishable from offset. True 1200 dpi resolution combined with four-bit variable-dot density enables you to print smooth solids and blends with rich color depth and subtle contrasts on a wide range of folding carton substrates. This resolution also makes it possible to print sharp, crisp details, enabling the addition of barcodes, or to include microtext and knock-out white text, for instance to prevent counterfeiting.

## 5. APPLICATION-TUNED DRY TONER

Our digital color presses use application-tuned dry toner that meets all the requirements of the folding carton market in terms of print quality, color gamut and accuracy, lightfastness and food safety without the use of any solvents or mineral oils. Your packaging is sure to stand out on the shelves. What's more, you don't have to use special substrates, or any pretreatment.
This saves you time and money while boosting your productivity.

# A RANGE OF HIGH-PERFORMANCE DIGITAL PRESSES

**Choose the digital color press that best meets your needs: Our Xeikon 3000 Series features five models with different maximum printing speeds and imaging widths, enabling you to upgrade as your business grows or changes. The Xeikon 3500 and its entry-level counterpart, the Xeikon 3050, offer an imaging width of 508 mm (20.0"), easily accommodating the standard B2 format.**

## NO TRADE-OFF

Whatever model you choose, there is no trade-off between quality and productivity. Well-engineered, robust and reliable, they all deliver impeccable quality at industry-best speeds. And here is why: All Xeikon presses use an LED-array-based dry toner electrophotographic printing process – engineered to perfection, this process remains the industry standard for quality and reliability. But that is not the only reason…

## HEAD-TURNING QUALITY

Image quality is a complex matter, determined by a combination of hardware, software, consumables, and processes – a combination we have meticulously developed and fine-tuned. Our digital color presses are packed with features to produce nothing less than head-turning quality, indistinguishable from offset prints:

- The unique combination of true **1200 dpi resolution** and **four-bit variable-dot density** offers not only smooth solids and blends, it also makes it possible to print crisp, sharp details, which is especially useful to accurately reproduce fine lines, such as serifs in certain fonts, to add barcodes, or to include microtext and knock-out white text, for example to prevent counterfeiting.

- At press start-up and throughout print runs, an **inline spectrophotometer** automatically controls and adjusts toner density and color register, ensuring uniform and accurate colors and color consistency – not only across a page and from page to page, but also between jobs and across presses.

- The **five printing stations** hold the four process colors plus one of a range of off-the-shelf or custom-made spot colors for the accurate representation of colors outside the CMYK gamut of your press, providing you with as wide a color range as possible. Our Folding Carton Suite comes with CMYK and orange as standard.

- The **Alpine fuser drum** has been developed especially to help produce smooth and consistent print on uneven and textured media, e.g. on recycled paperboard.
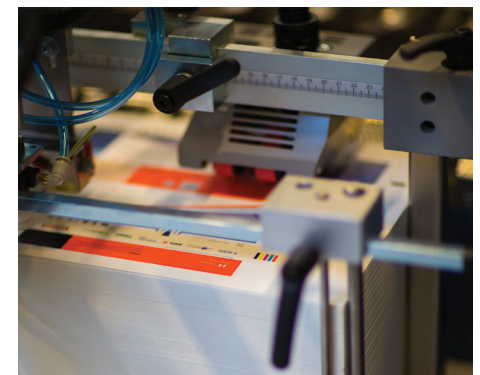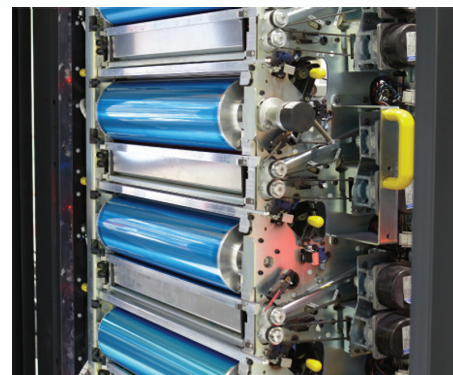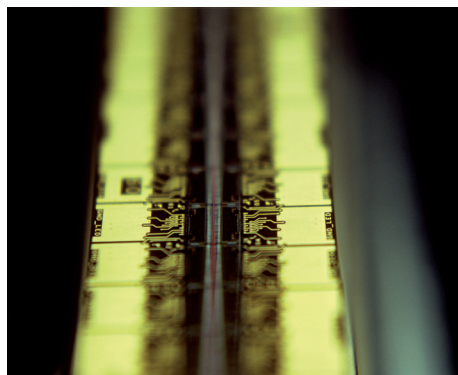
## BEST-IN CLASS PRODUCTIVITY

These presses also boast a host of features to improve and maintain your productivity:

- Our web-fed presses combine **full rotary** technology with **variable repeat length**, which means they can produce sheets of variable length, without any manual adjustments, and designs of different shapes and sizes can be nested on the web to make optimum use of the substrate. As a result, waste is minimized and, compared to digital sheet-fed presses, your productivity is increased.

- The **inline spectrophotometer** ensures automatic density and register control and allows you to make any necessary adjustments on the fly, without interrupting the print job.

- The **print stations** in all our presses have been designed to make changing the color configuration quick and easy.

# FOLDING CARTON SUITE

| | Xeikon 3050 | Xeikon 3500 | Xeikon 3030 | Xeikon 3030Plus | Xeikon 3300 |
|---|---|---|---|---|---|
| **Print media width** | 250-516 mm (9.8"-20.3") | 250-516 mm (9.8"-20.3") | 200-330 mm (7.9"-13.0") | 200-330 mm (7.9"-13.0") | 200-330 mm (7.9"-13.0") |
| **Imaging width** | 508 mm (20.0") | 508 mm (20.0") | 322 mm (12.7") | 322 mm (12.7") | 322 mm (12.7") |
| **Maximum print speed** | 9.6 m/min (31.5 ft/min) | 19.2 m/min (63 ft/min) | 9.6 m/min (31.5 ft/min) | 15 m/min (49.2 ft/min) | 19.2 m/min (63 ft/min) |
| **Press throughput** | 297 sqm/hr (460 MSI/hr) | 594 sqm/hr (921 MSI/hr) | 190 sqm/hr (294.5 MSI/hr) | 297 sqm/hr (460 MSI/hr) | 380 sqm/hr (589 MSI/hr) |
| **Toner** | Xeikon QA-I toner Standard: CMYK + orange | | Xeikon QA-I toner Standard: CMYK + orange | | |
| **Cutter** | Optional | Optional | Optional | Optional | Optional |
| **On-site upgradability** | Xeikon 3500 | - | Xeikon 3030Plus Xeikon 3050 Xeikon 3300 Xeikon 3500 | Xeikon 3300 Xeikon 3500 | Xeikon 3500 |

# A DEDICATED DIGITAL WORKFLOW

**Folding carton production is more than just printing. In order to reap the benefits of digital technology you need to get the job done with minimal effort, as efficiently and cost-effectively as possible. A dedicated workflow that offers you the tools to maximize your productivity while minimizing downtime and material waste, ensure quality consistency, and generally monitor your operations is therefore a must-have. This is why our Folding Carton Suite enables the implementation of an integrated folding carton production workflow.**

## XEIKON X-800: A POWERFUL DIGITAL FRONT-END

At the heart of this workflow is our X-800 digital front-end. Developing the press as well as the software driving the press and the job flow is a deliberate choice. Being able to directly access the hardware of the press enables us to implement closed-loop quality control, i.e. the measurements taken by the inline spectrophotometer are fed back to the digital front-end, which can then make any necessary adjustments without interrupting the print job. And because we have control over the hardware, the X-800 offers second-to-none imposition flexibility and variable data applications. And last but not least, we can quickly and more efficiently develop new features to meet our customers' requirements, including yours.

- **Seamless integration**
  Our proprietary front-end still allows you to enjoy your own trusted workflow and tools, thanks to our focus on industry standards. By design, Xeikon presses can be part of virtually any workflow, and by design, the X-800 can work seamlessly together with your existing workflow and any market-leading third-party applications. We can offer integration with design packages or workflow tools, such as dedicated web-to-print applications and management information software (MIS). Xeikon Aura Partners in these areas are industry leaders, such as Adobe, Esko, EFIRadius, Kodak, and Printect, to name but a few.
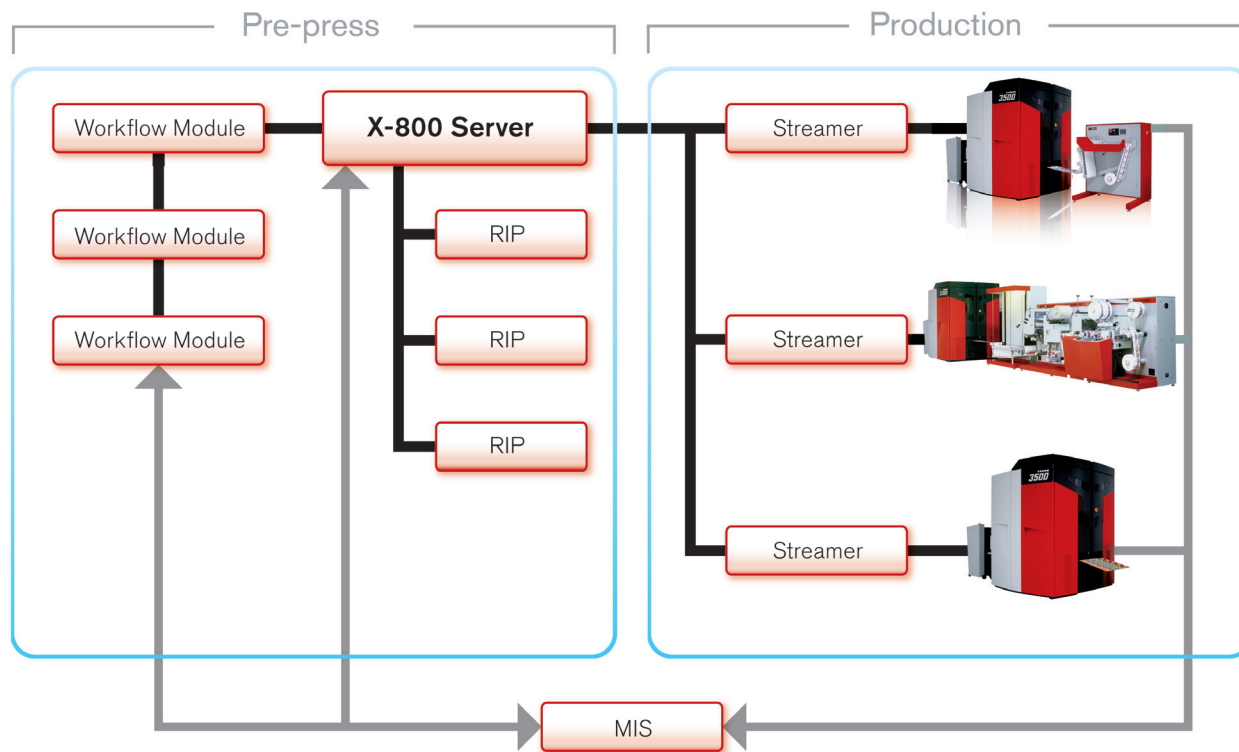
- **Separate prepress functionality**
  The X-800's powerful functions are provided in separate modules. This modular architecture allows you to separate the prepress function from the actual press operation, which greatly simplifies your operators' tasks. Press operators can focus on printing and press maintenance, just like in a conventional workflow.

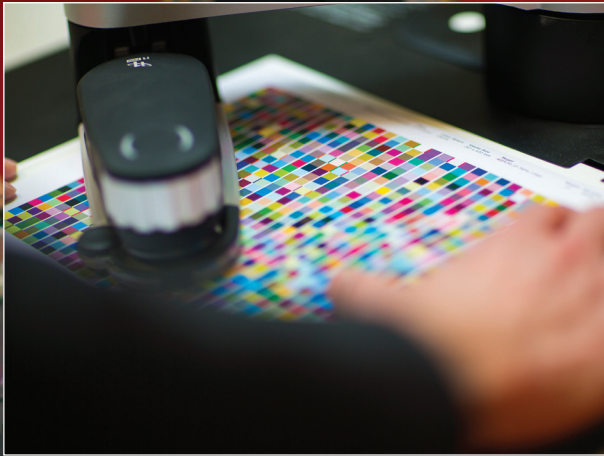- **Superior productivity, quality, and flexibility**
  With the X-800 you benefit from numerous features to minimize downtime and increase productivity while maintaining maximum flexibility and quality. It also ensures that all production data is stored in a database from which you and your operators can readily generate useful reports to analyze your print runs. This database can also be accessed by external management systems.

- **Complex variable data and easy metadata addition**
  The X-800 combines prepress, data processing, and press operation functionality, enabling you to print all common input files and also easily include even complex variable data. Adding metadata, such as sequential numbers or barcodes to track products or to prevent counterfeiting, is made extremely easy with the X-800.

Pre-press | Production

Workflow Module

Workflow Module

Workflow Module

X-800 Server

RIP

RIP

RIP

Streamer

Streamer

Streamer

MIS

*The modular architecture of the X-800 allows the pre-press functionality to be separated from the press operation, which simplifies your operators' tasks. Thanks to its scalability you can add processing power when needed, so your workflow can grow with your future requirements.*
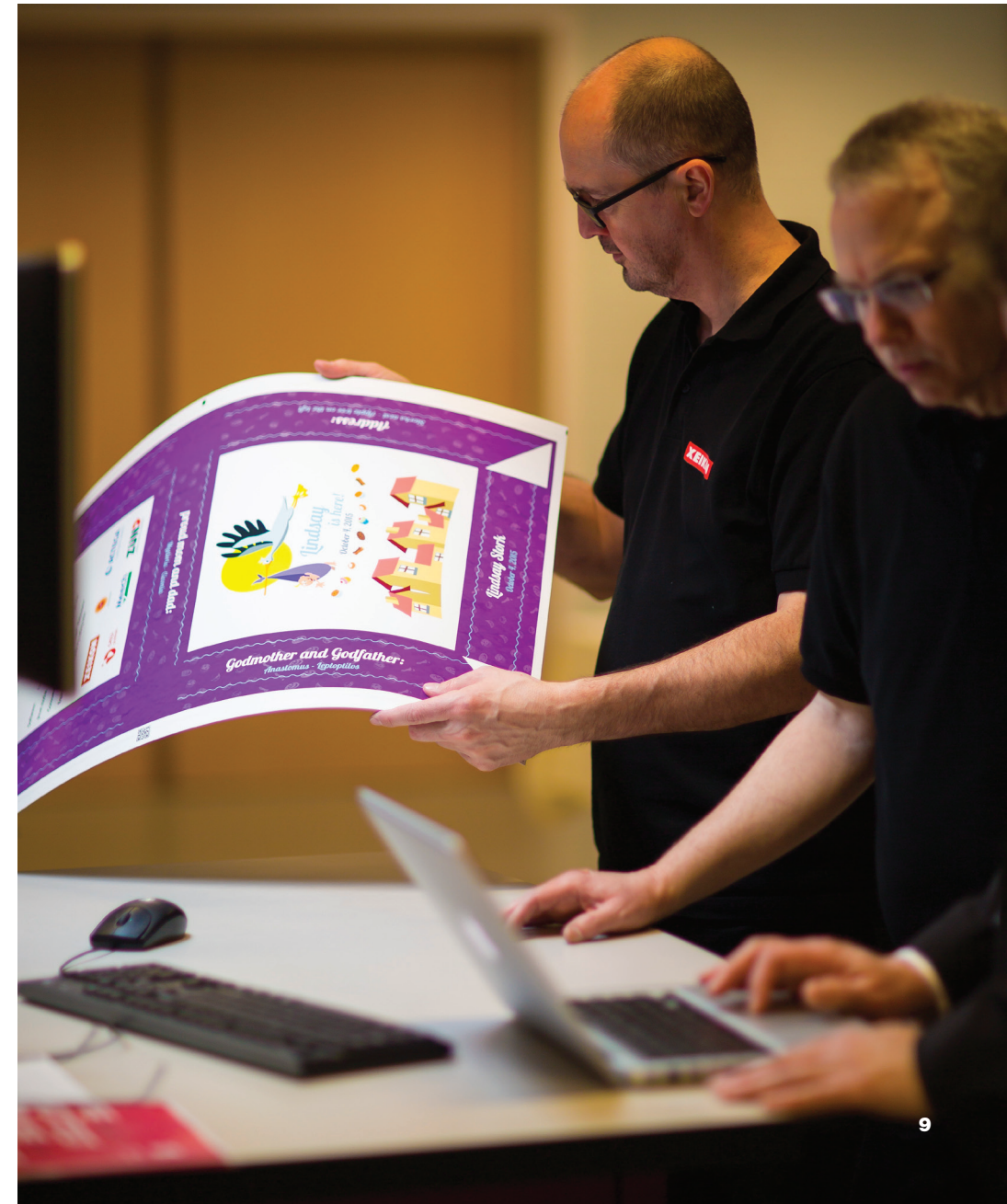
# COST-EFFECTIVE AND POWERFUL COLOR SERVICES

**Integrated into the X-800 are all the necessary tools to efficiently implement color management, ensuring consistent and reproducible results. In addition, you have access to two other optional tools.**

- **ColorControl**
  One of our color management tools is Xeikon ColorControl, an extremely user-friendly cloud application that allows you to profile not only your Xeikon press, but any print device in your production environment, e.g. offset presses. It also generates a color library for the accurate simulation of spot colors and it makes the simulation of industry standards possible. ColorControl offers you access to advanced color management without the need to invest in specialist knowledge and expertise. Finally, like any cloud application, it requires no extra investment in hardware and ensures you use the latest version of the application at all times.

- **ColorKey**
  This tool drives the spectrophotometer, enabling you to measure the Lab value of a specific color or to monitor any deviations from a preset standard throughout the print run. ColorKey also offers you and your press operators access to clear reports, analyzing and mapping each production run.

# APPLICATION-TUNED DRY TONER

Because we develop our toners in-house, we can vouch for their quality and performance. Our market-driven research ensures they are continually improved and fine-tuned to meet the requirements of specific applications. The Folding Carton Suite comes with QA-I toner. Geared to meet and exceed the demands of the packaging industry, it offers you a unique combination of benefits.

## COMPATIBLE WITH CONVENTIONAL SUBSTRATES

Unlike other digital technologies, Xeikon dry toner electrophotography can print on most conventional folding carton stock without any pretreatment, yielding excellent results even on challenging material, such as recycled board stocks. Not having to apply a coating or primer helps you save time, keep things simple, and save money. And being able to use untreated conventional substrates means that you do not have to keep a separate stock. All this also makes it much more straightforward to integrate your digital printing solution into a conventional printing environment.

## FOOD SAFE AND ODORLESS

Our QA-I toner has been especially developed for folding carton applications in the pharmaceutical and food industries, which place high demands on food safety. As a result, this toner meets FDA standards for applications involving indirect contact with food, and for certain applications with direct contact. Unlike some conventional print technologies, our dry toner does not contain any mineral oils nor solvents. Moreover, it is odorless, which is a must for applications such as chocolate packaging.

## EXCEPTIONALLY LIGHTFAST

Because QA-I toner has been developed with the requirements of the packaging market in mind, it achieves the best combination of lightfastness ratings for its process colors and standard spot colors, when compared with all other digital label printing technologies available. Your prints will keep their vibrant shelf appeal, no matter how long they are on display or in use.

## ENABLES HIGH-QUALITY PRINTING

Dry toner electrophotography is an extremely stable and reliable printing process. It always achieves optimal optical density, with the dot shape and size remaining constant, as determined by the screening. The absence of solvents also ensures image consistency. In short: Our application-tuned dry toner offers the best image stability and reliability around, while making the most of the presses' 1200 dpi resolution.

## EASY ON MAN AND THE ENVIRONMENT

Our dry toner contains no solvents, so our presses produce no hazardous emissions of VOCs (volatile organic compounds) and no odors. The same is true for Xeikon-printed cartons. Not only is this environmentally friendly, it is also operator-friendly, which is no less important. Moreover, Xeikon toner is manufactured using 100% green electricity and generating minimal material waste.

## AVAILABLE IN A WIDE RANGE OF COLORS

In order to provide you with as wide a gamut as possible, our QA-I toner comes in an array of colors.

- **Off-the-shelf spot colors**
  You can choose from a range of off-the-shelf spot colors: red, green, blue, orange, ExtraMagenta, and SuperBlack. Using one of these as a fifth process color enables you to accurately reproduce a wide range of colors that fall outside the CMYK gamut of your press as well as create special effects. For example, our SuperBlack toner has a density of 2.2-2.4 compared with 1.8 for normal black, ideal for creating distinctive and sophisticated folding cartons in the food and cosmetics industries.

- **Custom spot colors**
  To meet specific brand owner or security requirements, we can develop and manufacture custom-made colors to your own or your customers' exact specifications. Just contact us and we will take it from there.

- **Technical colors**
  On metallized substrates our white toner helps to prevent the metallic surface shining through the print. With our white toner you achieve a better opacity than "flexo white", with one layer only. Xeikon white toner can also be used for security purposes, e.g. for pharmaceutical applications: it contains an optical brightener that fluoresces under UV light.
  For special effects or low-level security applications, there is also a UV fluorescent clear toner. Our dry toner technology makes it possible to use even more sophisticated security features such as taggants, i.e. chemical or physical markers inside the toner, to prevent counterfeiting. Like our custom-made spot colors, these security colors are only available on request.

- **Creative colors**
  Our Creative colors offer designers and brand owners additional design options. MatteSilver and PalladiumSilver can be used to create special effects, to emulate metal surfaces, or as a brand color.

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# FEEDING AND FINISHING

**With our Folding Carton Suite comes a range of auxiliary equipment, such as print medium supply units, rewinders, a varnishing station, and output modules, to support productive and cost-effective digital folding carton production.**

## PRINT MEDIUM SUPPLY (PMS)

Our input module for folding carton printing, the Xeikon PMS Large, can handle rolls of paperboard stock straight from the mill, i.e. rolls of up to 600 kg (1320 lb) with a maximum diameter of 1500 mm (59.1"). Because the module is fully integrated with the press, the X-800 knows at any time how much stock is left on the roll. It can be equipped with an optional web cleaning unit that removes excess paper dust in order to reduce operator maintenance and enhance the durability of parts and consumables.

## WEB VARNISHING MODULE (WVM)

The Xeikon Web Varnishing Module offers you an extremely compact solution to apply aqueous spot varnish or, optionally, UV spot varnish – ideal for folding cartons requiring varnish-free areas for glue strips, the imprint of production data, or the application of post-print enhancements, such as metal foils. The cylinder applying the varnish holds a flexo plate with a repeat length of 25.4 to 101.6 cm (10" to 40"). The WVM has a built-in cutter to convert the web to sheets, triggered by a marker printed on the web. To ensure consistent quality of the aqueous varnish, the module is equipped with a closed chamber system that is automatically cleaned at the end of each production run. The WVM runs inline* at full press speed and the varnish roller can be easily changed to match the repeat length or width of the print job. What's more, your operator can judge quality and color immediately and make any necessary changes on the fly. The WVM can also be used to apply a flood varnish, e.g. on carton lids for ready meals.

## WASTE SEPARATOR

After the cutting stage, the Xeikon Waste Separator automatically removes the test and trial sheets along with any blank ones ("waste"), while the prints are neatly delivered to the output module, i.e. Jogger, Stacker or Pile High Stacker.

## JOGGER

The Xeikon Jogger is a flexible output module, ideal for small print volumes, and is suitable for the stacking of small sheets and sheets as large as 52 cm x 160 cm (20.5" x 63") of any substrate type. The Jogger is fitted directly behind the press or behind the WVM with the output in the lower position*. The installation of a Waste Separator is optional. Stack height: 0.2 m (8").

## STACKER

The Xeikon Stacker is suitable for the stacking of pulp-based substrates from 80 to 350 gsm and for minimum and maximum sheet sizes of 32 cm x 21 cm (12.6" x 8.3") and 51.6 cm x 75 cm (20.3" x 29.5"), respectively. The Stacker is fitted directly behind the press or behind the WVM with the output in the lower position*. You can remove the printed stacks without interrupting the print job. The Stacker is equipped with a test tray that automatically collects the test sheets as well as any waste. The installation of a Waste Separator is optional and is used to remove waste, which otherwise would end up in the test tray. Stack height: 0.45 m (18").

## PILE HIGH STACKER

The Xeikon Pile High Stacker can stack up to 1 m (40") of sheets and has been developed especially to accommodate longer print runs. It is fitted behind the WVM with the output in the higher position*. The stacks can be easily removed and transferred to any conventional die-cutter. The Pile High Stacker is suitable for the stacking of paper and paperboard from 40 to 350 gsm and for minimum and maximum sheet sizes of 32 cm x 21 cm (12.6" x 8.3") and 51.6 cm x 100 cm (20.3" x 39"), respectively. The installation of a Waste Separator is mandatory.

## PRINT MEDIUM REWINDER (PMR)

For roll solutions, we offer you a large rewinder, adapted for print media widths of up to 516 mm (20.3"). The Xeikon PMR Large has one spindle and produces reels of up to 1000 mm (39.4") in diameter. It can be equipped with optional slitting functions (the prints will still be wound on one spindle).

Together with our Aura Partners, we also offer additional auxiliary equipment to enhance the standard solution, allowing you to further customize your Suite.

* The WVM is available in two configurations: (1) with the output in the upper position (high output height) and (2) with the output in the lower position (low output height), depending on the output module used, i.e. Jogger, Stacker or Pile High Stacker.

# UNBEATEN PRINT MEDIA FLEXIBILITY

With our Folding Carton Suite, you enjoy unbeaten print media flexibility in terms of format weight and type. The Xeikon 3000 Series can print on scalable widths and an unmatched range of grades and types of conventional paperboard.

## NO COATING OR PRETREATMENT REQUIRED

Unlike other digital technologies, Xeikon dry toner electrophotography can print on most conventional folding carton stock without any pretreatment*, yielding excellent results even on challenging material, such as recycled board stocks. Not having to apply a coating or primer helps you save time, keep things simple, and save money. And because you can use untreated conventional substrates, there is no need to keep a separate stock.

## PRINT MEDIUM FILES ENSURE OPTIMAL PRINT QUALITY

Whatever technology you use, the substrate has a huge impact on the quality of the print. So, to help you get the most out of your Xeikon press, we have developed print medium files for a wide range of substrates. A print medium file contains a set of substrate-dependent press parameters and settings (e.g. registration parameters, density targets, etc.). Since the launch of the first Xeikon press, we have been continually developing and extending our print media database. In close collaboration with our print media partners, we have qualified a selection of high-quality substrates, enabling us to offer print medium files for the most common grades, across the full spectrum of substrate weights. Print medium files as well as datasheets are available for downloading from the print media section at www.xeikon.com.

*Specific materials like metallic and vinyl substrates require a standard coating for digital print media.*

## CHOOSE FROM A WIDE RANGE OF TYPES, WEIGHTS AND CALIPERS

All presses from the Xeikon 3000 Series can handle the same impressive range of paper stock with weights up to 350 gsm and calipers up to 550 μm. The table below provides you with an overview of the different grades/types of paperboard represented in our selection of qualified substrates (see above).

| DIN classification (coated) | Types (common names) and descriptions |
|---|---|
| GC1 | FBB (Folding Box Board), Surface and reverse pigment-coated folding box board Chemical & mechanical pulp |
| GC2 | FBB (Folding Box Board), Surface pigment-coated folding box board Chemical & mechanical pulp |
| GZ | SBB (Solid Bleached Board), SBS (Solid Bleached Sulfate) Surface pigment-coated solid bleached paperboard top layer, filler and reverse layer white |
| GT1 | WLC (White Lined Chipboard), Triplex Pigment-coated recycled paperboard, filler grey, white back |
| GT2 | WLC (White Lined Chipboard), Triplex Pigment-coated recycled paperboard, filler grey, cream back |
| GT3 | WLC (White Lined Chipboard), Triplex Pigment-coated recycled paperboard, filler grey, brown back |
| GD1 | WLC (White Lined Chipboard) Pigment-coated recycled paperboard with special volume (> 1.5 cm³/g) |
| GD2 | WLC (White Lined Chipboard) Pigment-coated recycled paperboard with special volume (> 1.4 cm³/g) |
| GD3 | WLC (White Lined Chipboard) Pigment-coated recycled paperboard with special volume (> 1.3 cm³/g) |