



PROGRESSIVE DIGITAL LABEL PRODUCTION

LabelStream 4000 series

Canon

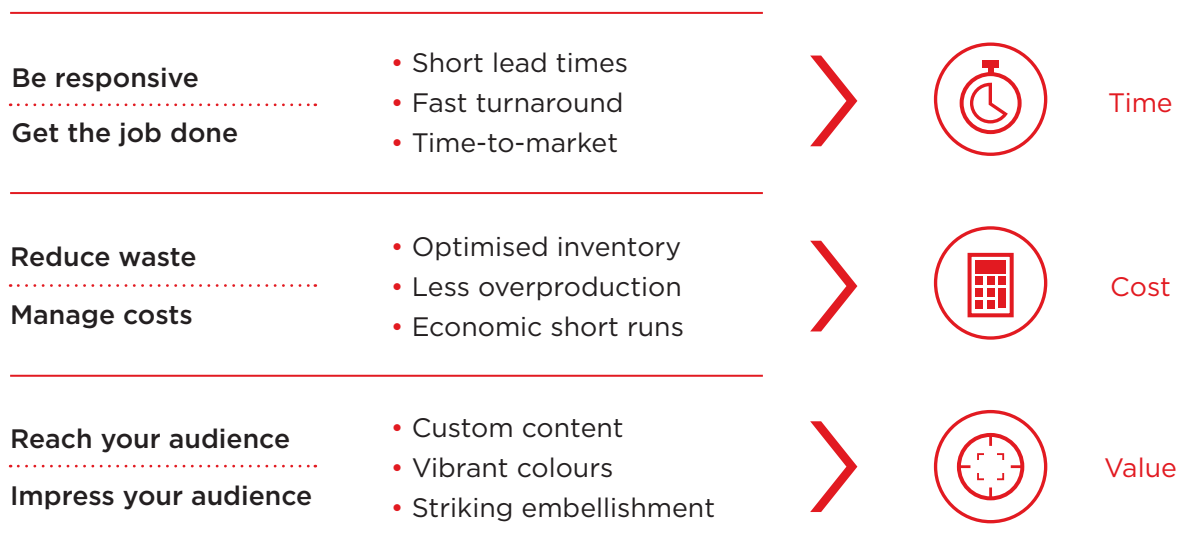
VALUE CHAIN DYNAMICS

Today's marketplace is characterised by an extremely high complexity. Spurred by intense competition and globalisation, shorter product innovation cycles and turnaround times are critical success factors.

Digital printing offers distinct benefits that are a perfect fit for the emerging requirements of the packaging value chain. It can increase manufacturing flexibility with just-in-time and on-demand production. In addition, the inherent capability of digital printing to change content and artwork with ease makes it a

powerful tool make communication more effective and drive sales with shorter time-to-market. Target group specific messaging from versioning to personalisation helps to grow revenues, extend market shares and build brands.

To be successful in today's challenging market environment you'll need to deliver outstanding performance along the three major business dimensions: Time, Cost and Value.



The growing acceptance of digital printing in the self-adhesive label market requires new production methods to cope with rising demand. Established technologies cannot fully meet the new market requirements and keep up with the ever changing market dynamics. A new level of digital productivity

is needed to cost-efficiently produce short to medium runs on an industrial-scale. Short lead and turn-around times, customised content, high print quality and inline finishing and embellishment will give brands a boost while meeting the most demanding supply chain challenges.

LABELSTREAM 4000 SERIES

One platform, limitless opportunities

Building on reliable UV inkjet technology and robust web transport, the six-colour press (CMYKO and White) offers print speeds of up to 75 m/min and two print widths of 330 mm (13") or 410 mm (16"), resulting in an industry-leading overall output of 1,845 m²/hr. It offers minimal setup times, flexibility to mass-customise contents and artwork, whilst enabling the shortest possible time to market. With two distinct setups the LabelStream 4000 platform provides a choice for different demands:

CORE Upgrade your business



The LabelStream 4000 **CORE** unit is the ideal entry into the world of high performance UV inkjet printing. Building on a cost-efficient, yet powerful base unit, various options are available to further expand the press setup to meet additional requirements.

HYBRID Inline file-to-finish conversion



The LabelStream 4000 **HYBRID** configuration offers a custom mix of UV flexo, embellishment and finishing units, turning it into a fully integrated single-pass label conversion line. This mix of conventional and digital technologies enables a complete inline production of high-quality self-adhesive labels.

LabelStream provides a total package along the four dimensions Performance, Impact, Growth and Partnership to meet highest expectations with benchmark production efficiency and dependable output, whilst providing consistent results on a wide range of media.

> PERFORMANCE

Benefit from exceptional productivity!

Based on reliable UV inkjet technology, print speeds of up to 75 m/min with two print widths of 330 mm (13") and 410 mm (16") ensure industry-leading productivity of up to 1,845 m²/hr. In hybrid configurations a high level of integration with optimised synching and setup management further supports production efficiency.

> PARTNERSHIP

Canon – your trusted partner!

Canon offers a complete package consisting of innovative technologies integrated into comprehensive end-to-end solutions supported by first-class technical service and professional services including colour and workflow consultancy, project management and business development.

> GROWTH

Configure the system to your needs!

Choose additional components to add value or to drive operational efficiency of the Core unit.

- Enhance productivity with higher speeds and wider print widths
- Extend the colour gamut with Orange and add high-performance White
- Include a pre- or post-digital UV flexo unit for spot colours or coating

> IMPACT

Get customer attention with quality and content!

- Large colour gamut & vibrant colours
- Screen-like white opacity of up to 80%
- Customised content and targeted messaging
- Flexibility for trigger-based campaigns
- Inline embellishment in hybrid configuration

CORE: A POWERFUL DIGITAL BASE UNIT

Xaar 2001 UV Inkjet print-heads with resolutions of up to 720 x 1080 dpi

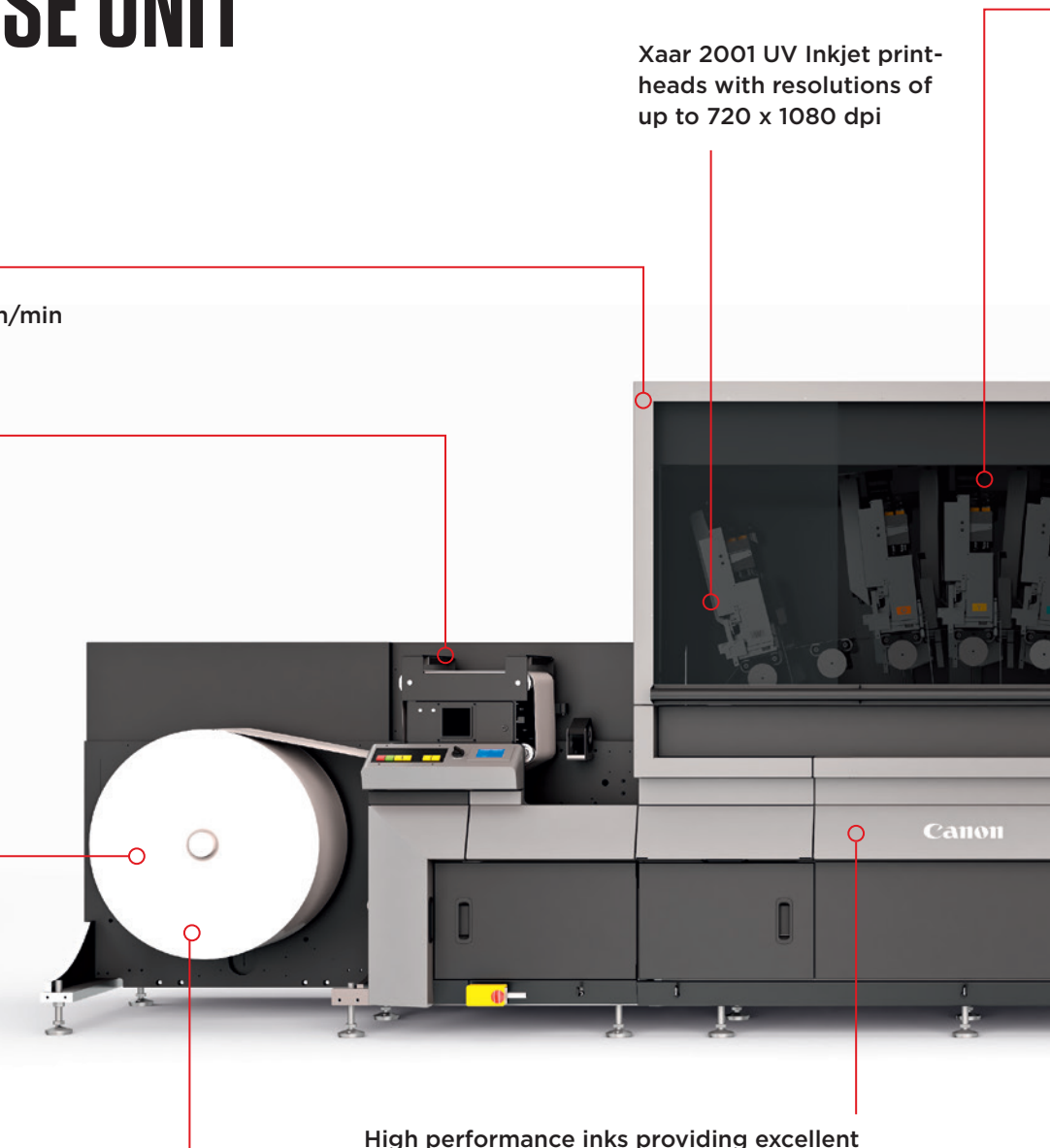
Full production speed of 75 m/min

Edge guide and web tension

From 200 mm to 410 mm print width

1000 mm diameter unwind and rewind with integrated roll lift

High performance inks providing excellent light fastness, chemical and scratch resistance



GROWTH PATH: FOR MORE TO COME

Colour channels

The Core unit can be extended with additional digital colour channels:

- **White** – to attain flexo-like opacity levels in a single-pass (>70%) at production speed or up to 80% at slightly reduced speed (Alpine White).
- **Orange** – to enhance the coverage of Pantone colour gamut up to 96% and to match important brand colours without compromise on speed.

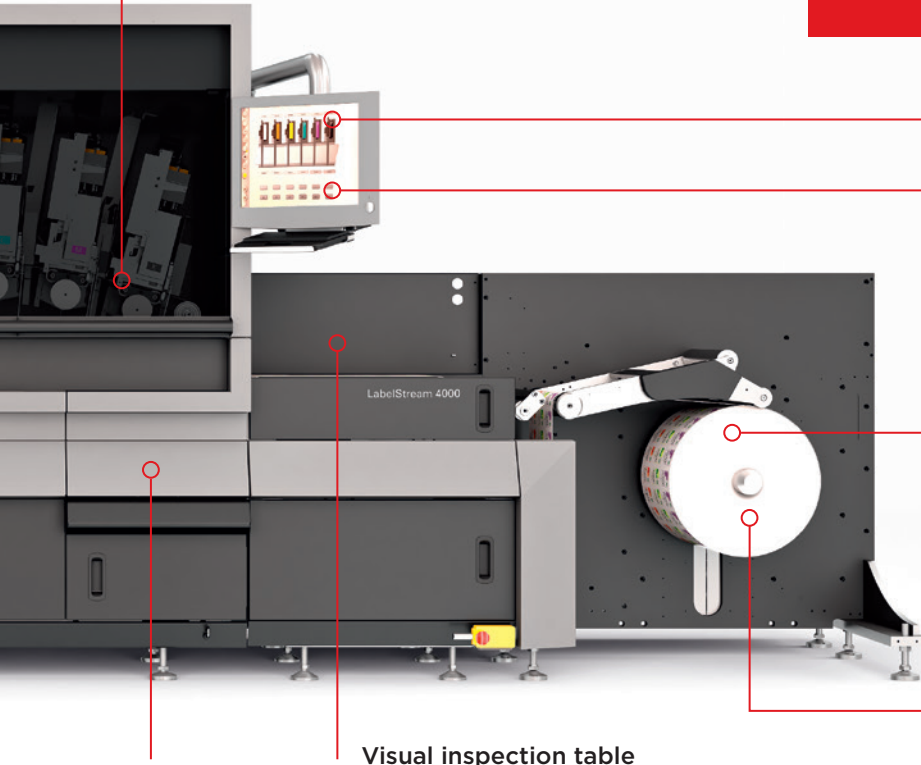
Web treatment

Optional web treatment components to safeguard a reliable high quality production:

- **Corona treater** – prepare the substrate for excellent adhesion
- **Web cleaner** – choose between single or dual-sided contact or non-contact to remove dust and debris

Super-sized CMYK colour gamut (96% spot colour coverage) and excellent colour consistency, up to 6 colours (WCMYKO)

LED Intercolour pinning after each colour to manage dot gain



Single-point of operation

Open workflow architecture, connectivity to standard workflow solutions via TIFF format; optional front-end for PDF processing

Wide range of standard label stocks including PP, PE, PPET, paper and cartonboard from 40 to 600 microns

Up to 430 mm media width

Visual inspection table

Web transport built on a proven label printing press

New feature highlights

LabelStream has received major updates regarding colour, productivity and Total Cost of Ownership (TCO). The following features are now available for both the CORE and HYBRID configuration:

- **Alpine White:** screen-like digital White with up to 80% opacity
- **Orange gamut extension:** optional 6th colour to further enlarge the already super-sized CMYK colour gamut
- **Enhanced job management** features
- **Improved syncing** of digital and analogue modules
- **New entry-level configuration**
- **Diversified service and pricing models**

Productivity

Increased production efficiency for higher volume demands or peak production capacity.

- **Print speed:** optional print speeds of up to 75 m/min for highest performance requirements, resulting in an overall output of 1,845 m²/hr (at 410 mm print width).
- **Print width:** optional 16" (410 mm) extended print width for a 25% productivity boost and web width flexibility.

Flexo lite

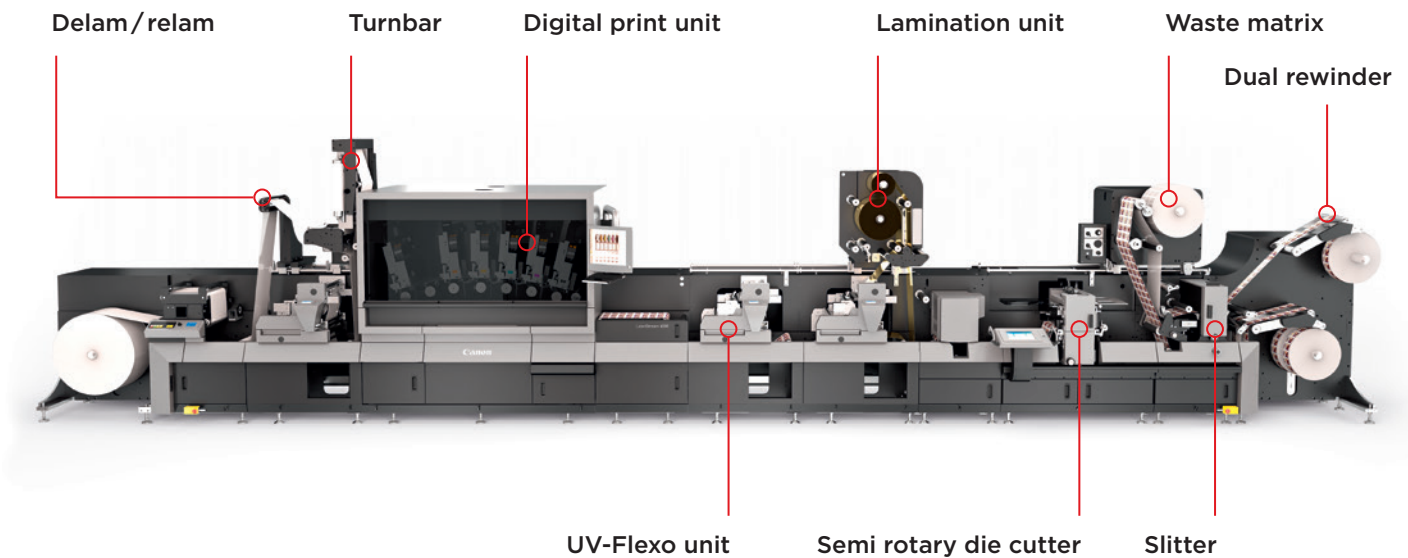
Extend your digital production unit with spot colours, varnishing and coating capabilities to meet the most common protection and embellishment needs in a simple and cost-efficient manner.

- **Pre flexo unit**
- **Post flexo unit**

HYBRID

Inline file-to-finish label conversion

Hybrid printing combines the benefits of digital with conventional converting techniques to balance application costs and quality for the most cost-efficient production. The system can be expanded to a full hybrid configuration with a custom mix of additional flexo, embellishment and finishing units turning it into a fully integrated single-pass label conversion line to meet various demands and budgets. This mix of conventional and digital technologies enables fast and affordable production of high-quality self-adhesive labels.



Hybrid press options

- UV-Flexo units
- Turnbar
- Delam/relam
- Semi rotary die cutting
- Full rotary die cutting
- Cold foiling
- Lamination
- Varnish
- Waste matrix
- Dual rewriter
- Slitting

LabelStream provides accurate registration and fast sync between flexo and digital. It requires minimal operator intervention, in order to drive uptime and high quality output, whilst reducing waste. The seamless interplay of the two technologies, driven by LabelStream's central control panel, allows for easy recalling of job settings and automated job setup. Job changes can take effect, on-the-fly, without halting the press to adjust digital and analogue components.

CANON – YOUR TRUSTED PARTNER

The Canon inkjet DNA as basis for your success

As worldwide No. 1 in inkjet webfed printing and technology leader in UV inkjet based large format printing Canon identified the key factors of our customers for a successful digital printing business. This experience and insights became part of our DNA over time, influencing our strategies, products and services to help our customers build a profitable business. However, there is no shortcut to true inkjet DNA. It has grown and evolved with each installation of more than 1,600 high-volume inkjet presses and 8,500 UV-based Large Format Printing systems.

Business Model

Service

Solution

Technology



Bespoke business development

Maximum uptime and availability

End-to-end solutions from file-to-finish

Best of class technology components

Worry-free operation

Matched to your business situation and production environment, we develop solutions, establish the corresponding work processes, and instruct your staff for the operation, and daily maintenance of your printing presses. Your uptime is our highest priority! We provide maintenance contracts according to your needs – with service levels supporting extended working hours and reaction times as fast as two hours (depending on local service capabilities). Our service models are fully proven and tested in many multi-shift operations printing high volume applications, enabling our customers to meet tight deadlines.

Dense service network

~250 service technicians in Central Europe dedicated to inkjet production printing to keep your production up and running.

Sophisticated logistics network

The spare parts you need are nearby thanks to our global logistics network.

Tailored service models

Choose between various service models depending on your needs.

Professional Services & Training

Operator training and consultancy for colour, workflow and applications completes the package.

Comprehensive service model

- Local presence in each country (Central Europe)
 - Travel and labour cost
 - Spare parts
 - Replacement parts (inc. printheads)
 - Preventive maintenance
 - Remote diagnostics
 - Service for digital and analogue components
 - 2 hour qualified call back in local language*
 - 4 hour on site*
 - Extended hours (standby)
 - 2 hours on-site (depending on local availability)
- included optional *during office hours

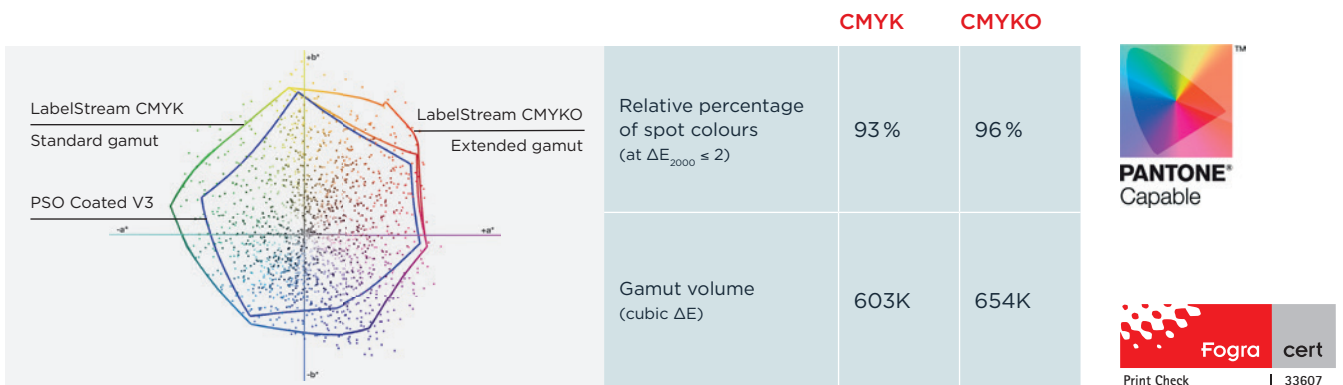
LEADING TECHNOLOGY

Outstanding colour gamut

Colour accuracy is a crucial element in daily production and occupies the minds of brand owners and converters. LabelStream provides one of the largest colour gamuts of thanks to high pigment content and high laydown capabilities. Achieving a spot colour gamut of up to 96% at $\Delta E_{2000} < 2$, LabelStream enables the production of high quality labels and accurately matched brand colours on standard label stock at full production speed.

The LabelStream 4000 series is the first multicolour digital press to be certified according to the Process Standard Digital (PSD) Print Check based on Fogra 55 reference gamut defined by the Fogra Research Institute for Media Technology. Examined for colour fidelity, consistency, uniformity, print resolution and detail LabelStream achieved the highest category score (Level A), indicating that the 7-colour benchmark gamut can be reached with only 5 colours!

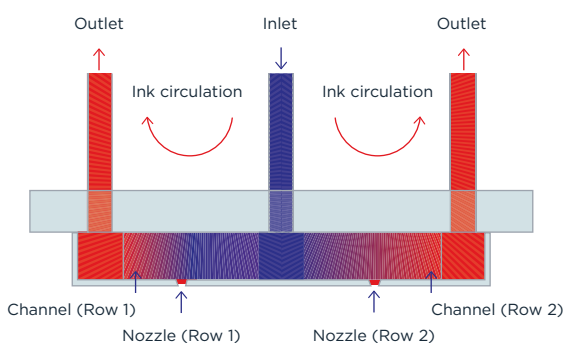
The LabelStream 4000 series is the first UV inkjet label press to be asserted Pantone® Capable. 81,3% of the Pantone® Solid Formula Guide Coated Colors are within the gamut of the LabelStream 4000 series using the 5-colour CMYKO ink set at $\Delta E_{2000} < 1,5$ absolute tolerance.



Proven printhead technology

LabelStream uses the industry-proven and robust UV inkjet printheads Xaar 2001+ UV. The piezo-electric drop-on demand (DoD) inkjet print heads have been designed for highest reliability, colour consistency and high ink laydown capabilities; resulting in a large colour gamut with highly saturated colours and highest white opacity. The ink laydown can be adjusted to optimise cost and to achieve different gloss levels or desired effects, such as tactile structures.

The patented Xaar TF Technology™ ensures a continuous ink flow that directly passes the back of the nozzles during drop ejection. Air bubbles and unwanted particles are carried away and nozzles remain primed.



High Performance White

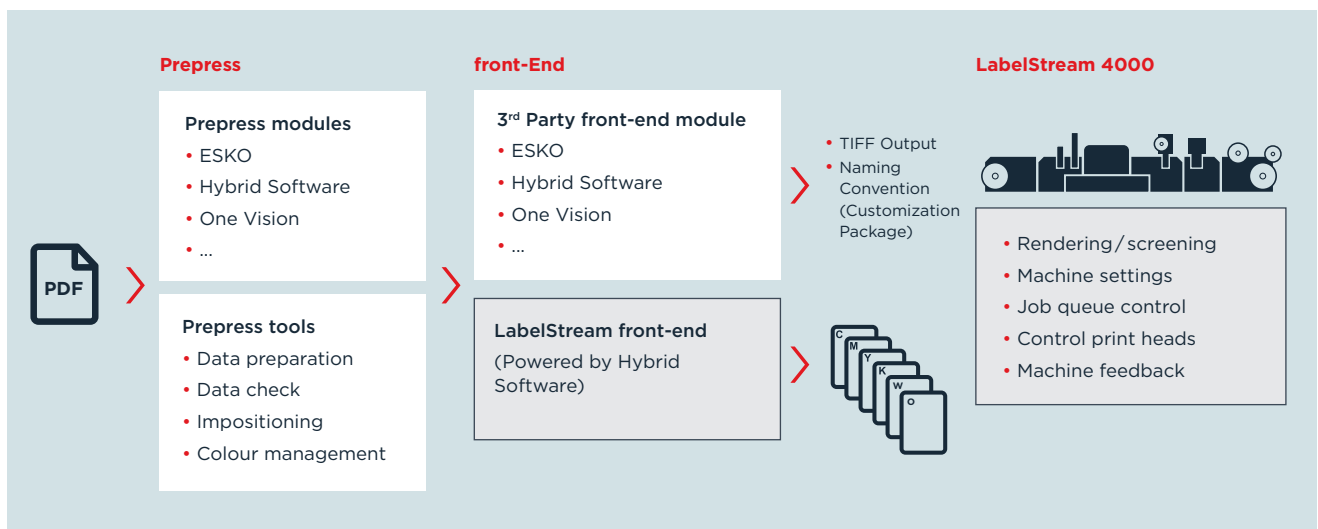
The unique design of the Xaar 2001+ UV print-heads enables the reliable use of large and heavy pigment particles to achieve high opacity levels. LabelStream offers screen-like opacity White up to 80% at 36 m/min in a single-pass. With additional opacities of >70% at 50 m/min and >65% at 75 m/min a wide range of White performance levels are available to meet various demands.

Flexible workflow architecture

The implementation of a new digital label press often requires changes and adaptation of existing workflows, processes and working methods. LabelStream reduces possible integration efforts to a minimum.

Thanks to the entirely open structure of the LabelStream 4000 series' print server and use of standardised file formats, you can seamlessly integrate into your existing workflows, such as Esko, Hybrid Software, OneVision or others. The interface provides similar functionality and performance to a JDF based solution.

Alternatively a dedicated LabelStream front-end (LSFE) can be used to RIP, colormanage and process imposed PDF files. The front-end is based on Cloudflow from Hybrid Software and offers additional customization options for advanced workflow automation.

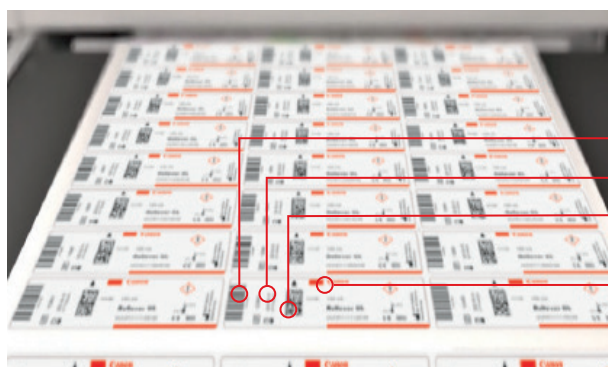


Variable data printing (VDP)

The LabelStream 4000 allows the integration of variable text and numbers, barcodes and QR codes and colour images to better meet either security (track & trace) or marketing objectives (personalised labels, randomisation).

The LabelStream VDP solution provides:

- Open approach for a wide range of authoring software tools
- Easy integration with various third party systems
- No proprietary interfaces



The following types of variable data objects are supported with the standard processing power of the LabelStream 4000 series

- Mono barcodes and numbers
- Mono text
- Mono QR code
- Colour number or colour text
- Colour images/graphics

LABELSTREAM UV INK SET

Vibrant, reliable, resistant

The LabelStream 4000 series uses UV-curable inks that have been developed to ensure reliable, consistent jetting and print performance; optimised for digital and hybrid label printing. The inks are specifically formulated to provide excellent wetting capability, resistance to reticulation and superior adhesion properties.

Features

- Adhesion to a wide range of substrates including most grades of top coated PE, top coated PP, PVC and paper.
- Designed for a wide range of applications including labels and self-adhesive decals.
- High strength pigmentation with wide colour gamut.
- High opacity white for background printing and fine detail.
- Resistant to curl on edge bleed labels.

- Compatible with typical finishing processes including die cutting, foil blocking and embossing.
- Resistant to a range of typical household chemicals.
- 5 litre recyclable 'bag in a box' containers.

Resistance and lightfastness

LabelStream inks are resistant to abrasion and most common chemicals while providing highest light-fastness values on the Blue Wool Scale. The table below displays the tests performed on the inks.

Colour ref.	Code	Soap	Oil	Alkali	Acid	Alcohol	Typical blue wool rating
Yellow	YP75-K7D-L10	+	+	+	+	+	6-7
Magenta	MP75-K7D-L10	+	+	+	+	+	7-8
Cyan	CP75-K7D-L10	+	+	+	+	+	8
Black	KP75-K7D-L10	+	+	+	+	+	8
White	WP75-K7D-L10	+	+	+	+	+	8

Resistance scale: + = Pass, - = Fail, Blue wool rating: 8 = Excellent, 1 = Poor

Environmental information

- The inks do not contain ozone-depleting chemicals as described in the Montreal Convention.
- The inks are formulated free from aromatic hydrocarbons.
- The inks are free from any volatile solvent.

Ink compliance

The ink is produced in line with the European Printing Ink Association (EuPIA) Guidelines and EuPIA Exclusion List for Printing Inks and Related Products.

- REACH and SVHC Compliance: All utilised raw materials in the LabelStream inks are REACH compliant. The inks do not contain any known amounts of substances of very high concern

(SVHCs) at more than 0.1%, nor do the inks contain the lowest concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008.

- VOCs: The inks do not contain volatile organic compounds (VOCs) as described by EU definition Council Directive 1999/13/EC.
- BPA and Benzophenone: Bisphenol A (BPA) and Benzophenone are not intentionally added to this ink set.
- Content of Nickel and other Heavy Metals: None of the raw materials used in the formulation of the inks appear in the California Proposition 65 list dated March 27th 2015.
- Natural Latex Statement: The inks are latex free.

TECHNICAL DATA

LabelStream 4000 series at a glance

Print Modes

Performance
Quality
Alpine White
Graphics

720 x 720 dpi at 75 m/min (>65% white opacity)
720 x 1,080 dpi at 50 m/min (>70% white opacity)
720 x 1,080 dpi at 36 m/min (80% white opacity)
720 x 360 dpi at 50 m/min

Media & Print Width

Digital print width
Flexo print width
Web width

330 mm | 410 mm
420 mm
430 mm

Technology

Printing technology

Single pass UV inkjet
Xaar 2001+ UV hybrid side shooter® with variable dot size and greyscale technology

Workflow

Open workflow architecture
Connectivity to standard workflow solutions via TIFF format
Optional front-end for PDF processing (powered by Hybrid Software)

Productivity

Ink/colours
Optional colours

712 - 1,845 m²/hr
UV CMYK
UV White and Orange

Media

Thickness

40 - 450 µm (hybrid)
40 - 600 µm (digital)

Type

Backed liners: e.g. PE, PP, PVC, PET, paper (uncoated, coated)
Linerless/unsupported: e.g. Kraft, carton, BO-PET, BO-PP, metallised film

Scan the QR code to visit the
LabelStream 4000 series webpage or use
the following link: <https://bit.ly/2Wtfp0S>



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