

# *Onset***X**

**A NEW GENERATION FOR A POWERFUL FUTURE**

  
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Value from Innovation

## The Inca Onset X series

A new generation for a powerful future

**Inca Digital announces a new benchmark for throughput, quality, supreme reliability and 'future-proof' scalability: The Onset X Series of large-format, flatbed UV inkjet printers, sold globally and exclusively by Fujifilm.**



**Inca Digital** ([www.incadigital.com](http://www.incadigital.com)), part of the **SCREEN Graphic and Precision Solutions Group**, was founded in 2000 as a spin-off from product and technology developers **Cambridge Consultants**. Still headquartered in **Cambridge**, the company today employs 230 people, 25% of them in R&D.

Inca has developed and brought to market a new machine approximately every 18-24 months, including landmark products such as the Eagle 44, the world's first UV flatbed inkjet printer, and the ground-breaking Onset S70 – at the time (2007) the world's fastest UV digital printer and the first to offer satin, semi-gloss and gloss finishes.

Inca UV inkjet printers are sold in 40 countries by the company's sole global distributor, **Fujifilm Graphic Systems**, a member company of **FUJIFILM Corporation**. Fujifilm's proprietary technologies for best-in-class printing include pre-press and pressroom solutions for offset, wide-format and digital print, as well as workflow software for print production management.

# The colourful revolution: UV inkjet in large-format digital printing



## Inca by numbers

UV inkjet printing “is gathering momentum and growing across the world”, according to Smithers Pira, and the market for UV printed products is forecast to reach \$15.9 billion by 2018<sup>1</sup>. In 2014 the Specialty Graphic Imaging Association (SGIA) reported that 98% of its members who had started out in screen printing now use digital technology and 47% are entirely digital<sup>2</sup>.

A ‘virtuous circle’ of technology developments and evolving end-user demands is driving this growth – both have seen major changes in the 15 years since Inca Digital launched the Eagle 44, the world’s first UV flatbed printer.

From the outset, the technology came with two big USPs: inkjet is the only non-contact process capable of high quality and high performance, and UV provides instant curing and durable finishes suitable for indoor and outdoor applications.

To this powerful platform of economic, technical and environmental advantages manufacturers have since added faster, more flexible printers featuring high-performance printheads, inks with excellent adhesion and flexibility, and the capability to print superb quality on an ever-expanding range of substrates.

UV inkjet offers speeds and application flexibility that technologies such as latex and eco-solvent cannot match. Today’s printers can print matt, satin and gloss,

and create spot UV effects, on a variety of coated and uncoated materials, making possible exciting new applications in sectors such as POS, signage, commercial print, packaging, labelling, decoration and industrial printing.

A further driver of growth is UV inkjet’s capacity to meet end-users’ demands for short-run, mass-customised and versioned promotional print. As businesses acquire more data about their customers they can not only target them more precisely but also track how they respond to offers and constantly fine-tune propositions.

Despite marketers’ adoption of social media and other online channels to reach consumers, print continues to be a major campaign weapon, not least because online content cannot match the impact and ‘look and feel’ of a high-quality, relevant printed product. This is especially true of POS displays: a 2014 study found that 82% of purchasing decisions are made in the store; that 34% of mass-merchant shoppers don’t turn up with a shopping-list; and that 62% don’t pre-plan shopping trips using other information sources<sup>3</sup>.



For print service providers these trends place a premium on fulfilment – the ability to process, print and deliver products quickly. Total print volumes may be large but made up of any number of different versions customised to particular audiences: for example, a fast food chain might tailor its menus – and its prices – to different regions.

PSPs therefore need software that can handle multiple files and printers that can set up and change between jobs quickly. Assuming targeted campaigns are changed frequently and need to be delivered nationwide to support a simultaneous launch, the printers need ‘burst-capacity’ throughput to meet the tightest deadline. And it’s a given that everything has to be produced to the highest quality, especially for displays viewed at close quarters; the days when marketers accepted slightly lower quality in exchange for fast turnaround and short runs are gone.

<sup>1</sup> The Future of UV inkjet printing to 2018, Smithers Pira, 2013

<sup>2</sup> 2014 Specialty Imaging Industry Benchmarking Report (Graphics & Sign Community), SGIA, 2014

<sup>3</sup> POPAI Mass Merchant Study, Point of Purchase Advertising International, 2014

## Flexibility, Freedom and Function: The Inca Onset – Scalable Architecture



**The Onset X3:  
The fastest Onset ever!**

**This fast-growing, vibrant market may be rich in exciting opportunities for print service providers, but it's moving at such a pace that it's a challenge to choose a printer that's flexible enough to meet the changing requirements of a growing business.**

In 2013 Inca met this challenge with the launch of the Onset Scalable Architecture, an innovative, modular platform that allows users to keep pace with developments and maximise ROI.

Like all good ideas, Scalable Architecture is essentially simple – it gives users the power to evolve the productivity/colour specifications of their Inca Onset printers – on-site – to match their budgets and changing business needs. Ink tanks, printheads, UV curing lamps, automation, speed modes, electronics and software – the common platform shared by Onset printers means all these components can be adapted.

The result is that users can choose the best printer for their initial requirements knowing they have the flexibility to convert quality, speed and ink options when they wish. And with flexibility comes freedom – to diversify, to anticipate and adapt to a changing environment, to add value and increase profitability.

### **The new Onset X Series**

Now Inca raises the bar again with the ground-breaking new Onset X Series. Onset X takes the Scalable Architecture concept of future-proof technology even further to provide print service providers with the most complete range of high-quality, high-performance large-format UV printers on the market.

Onset X is the result of in-depth consultation with large-format print producers of all sizes and working in all sectors. When we asked them what were the most important factors influencing their choice of printer,

freedom and security came top of the list. Freedom, because in fast-moving businesses like POS and signage, it's vital to be able to adapt quickly to change and explore potential opportunities as they arise. Security, because producers want a printer that not only meets their needs today but can respond to what's around the corner.

In a nutshell, they don't want to be forced to compromise by choosing between quality and productivity. In an ideal world, they want the choice of printer to be the simplest decision they make – because wherever they take the business, they know the printer will continue to provide the productivity and quality that's right for them.

The new Onset X Series is just that. Onset X provides a single-platform, scalable solution that users can configure just as they wish to provide exactly the combination of speed and/or colours they need. They can start out with the Onset X1 and – as the business develops – upgrade first to the Onset X2 and eventually to the top-of-the-range Onset X3.

**Unique 14-channel potential:** Key to this flexibility – and unique among high-end large-format flatbed printers – is the 14-channel design of every Onset X.

This means that, for example, an eight-channel Onset X1, with one set of CMYK plus LmLcW0, can be fitted with an additional six-channel carriage to become the Onset X2 (adding a second set of CMYK) then transformed again into a top-of-the-range Onset X3 (3 x CMYK plus W or O). And because Inca has engineered modularity into the new platform, upgrades can be carried out at customers' sites and completed in a few days, minimising downtime.





**OnsetX1**  
**OnsetX2**  
**OnsetX3**



#### One platform. Infinite potential

The Onset X1, Onset X2 and Onset X3 enable print service providers to produce the widest spectrum of POS graphics, from everyday signage to the highest-quality backlit displays for demanding markets such as cosmetics and luxury consumer goods.

#### Onset X1

With a maximum throughput of 560m<sup>2</sup>/hr (equivalent to 112 full-bed sheets/hr), Onset X1 is ideal for companies producing a mix of fast-turnaround retail graphics for distance viewing and high-quality images for close-up viewing. Of the eight channels, four print CMYK and the remainder can be configured as required using any of light magenta, light cyan, white and orange (LmLcWO). When the time is right, an additional six-channel carriage can be added to scale up to the Onset X2.

#### Onset X2

As the business expands, Onset X2 provides the capacity to extend the range of jobs companies can handle. The addition of a second set of CMYK delivers even higher productivity – 725m<sup>2</sup>/hr (145 beds/hr) – while an optional six LmLcWO channels can be populated to add versatility and superb quality. A choice of uni-directional, bi-directional and super high-quality print modes can be selected depending on the specific job requirements.

#### Onset X3 – The fastest Onset ever!

Capable of printing at a blistering 900m<sup>2</sup>/hr (180 beds/hr), using 14 or 27-picolitre printheads, the Onset X3 sits at the pinnacle of productivity. With Onset X3, users of analogue screen printing lines can take the digital route, confident they can print long runs of high-quality print with superb consistency and reliability. The 14 channels feature three sets of CMYK plus the choice of white or orange.

**Fujifilm Dimatix printheads:** All three Onset X ranges incorporate a choice of 9, 14 or 27 picolitre high-performance Fujifilm Dimatix printheads, depending on whether the applications are focused on quality or speed.

**Choice of handling options:** All models in the Onset X1, X2 and X3 ranges are available with a variety of handling options handling substrates in a new larger size of up to 3.22m x 1.6m and thicknesses up to 50mm.

**25-zone 'no-masking' vacuum solution:** Especially significant is the new-design 25-zone vacuum table, featuring a powerful new vacuum system and choice of skin design depending on the user's needs. This solution completely eliminates the need for bed masking, whatever the substrate size, and greatly reduces set-up times for the most common POS substrates and increases throughput of short-run, fast-turnaround print.

Vacuum zones are independently controlled and the auto zone function allows it to be easily managed by the operator. Frequently-used formats can be automatically programmed and stored in a user-created database. Inca states that this innovation alone can increase Onset X productivity by up to 20% compared to previous Onset printers.

**New GUI:** For the Onset X Series, Inca has developed a new GUI to provide a powerful yet simple-to-use printer and job management tool. It is easy to finalise and initiate jobs, save settings, create print queues and manage and optimise every stage of the print process. Improved off-machine job set-up means jobs arrive at the printer with more predefined parameters – substrates, print speed, quality mode, gloss level, etc – already specified. Password control and web browser access enable production management to control the decision-making process and amend print queues remotely in response to changing requirements.

**Other new Onset X features include:** advanced high-speed shuttering systems that protect printheads from UV damage when printing thick substrates; optional automated substrate cleaning using an adhesive roller system to remove debris; and a new-design of roller for corrugated board printing that, in a single pass before printing, presses the substrate onto the vacuum bed to ensure a good contact.

# Inca, Fujifilm and you Engineering success together

- Choice of handling options
- 25-zone 'no masking' vacuum table
- Intuitive touch screen GUI
- Robust construction
- iNozzle mapping
- Optimised Fujifilm inks
- High-speed shuttering system



- Long-life Fujifilm Dimatix printheads
- Choice of 9, 14 and 27 picolitre printhead
- Prints on substrates up to 3.22m x 1.6m and 50mm thick
- Choice of 8-14 colour channels
- Precision-engineered table with 'print-a-shim' for ultimate accuracy
- Scalable Architecture enables choice of configurations

**Like previous Onset printers, the Onset X combines the best of Inca and Fujifilm hardware, software and consumables:**

● **Robust construction:** The 25-zone, height-adjustable vacuum table is mounted on a steel chassis, supported on vibration-isolated mountings. The print gantry houses a full-width array print carriage with drop-on-demand inkjet printheads, the UV light source for curing the inks and automated printhead cleaning stations. A precision linear motor controls the movement of the print carriage and vacuum table to 1-micron repeatability.

● **Precision-engineered substrate table:** A perfectly level table surface is critical for accurate, repeatable drop positioning, particularly in bi-directional print mode. Inca's new patented 'print-a-shim' process takes its class-leading technology to the next level and ensures a completely flat table with zero-tolerance. Using the Onset X's in-built sensor the 'print-a-shim' process precisely measures the profile of the table, and defines a contour to accurately create ink shims to produce a completely level platform for the final table skin.

● **iNozzle mapping:** Inca's patented nozzle-mapping feature eliminates print quality issues caused by deviated, unstable or blocked nozzles. To automatically identify defective nozzles the software prints, scans and analyses a test pattern, prevents jetting from affected nozzles and compensates with adjacent functional nozzles. The procedure takes just five minutes.

● **Optimised inks:** The ink/print engine relationship is critical to consistent high-quality inkjet printing, day in, day out. Onset X printers use Fujifilm Uvjet inks optimised to remain stable in the print circulation system and printheads. Key criteria for UV inkjet inks include:

– **Colour:** A wide colour gamut for accurate reproduction and vibrant graphics.

– **Reliability:** Inks must jet reliably to print to the highest quality for long periods with minimal operator intervention.

– **Consistency:** Inks must produce the same high-quality images and colours, print-to-print and batch-to-batch.

– **Performance:** Inks must provide excellent adhesion and instant drying, be tack-free, and durable for up to two years with excellent fade and water-resistance.

– **Economy:** Inks must allow printers to operate in an efficient and cost-effective manner.

– **Long-life printheads:** Onset X printers use the latest Fujifilm Dimatix printheads, notable for their reliability and long life. To maintain printheads in optimum condition, UV sensors monitor the printheads' exposure to UV light and trigger printhead cleaning when needed. Sensitive mechanical substrate height detectors protect printheads and substrate by monitoring obstructions that exceed the print gap and stopping printing.

– **Automation:** Users can specify different levels of automation. In the semi-automatic option, the substrate is loaded by the operator but automatically removed. Three-quarter automation involves the operator pre-aligning the substrate on a lay table before the handling system automatically places it and removes it. There are two fully-automated systems available allowing stack-to-stack printing for longer production runs.

## Ultimate reliability, Unmatched service, Unrivalled support

Inca Onset printers have a justified reputation for extraordinary reliability and unmatched production uptime. The combination of compatible hardware, software and inks on a well-maintained machine can mean that the printheads can sometimes last the lifecycle of the printer.

While it's not uncommon for some competitive printers to need tens of replacement printheads every month, 75% of Onset machines did not need a single printhead replacement at all in 2014 – even though many of them were running three shifts a day!

We work hard to maintain this reputation which means we constantly measure the performance of both the Inca printers in the field and the engineers supporting our customers. We are very proud that Onset printers achieve 90% uptime availability.

A major contributor to such performance is Inca Vision, a software-based customer support service unique to Inca Digital and developed to ensure that operators implement regular preventative and corrective maintenance. Inca Vision lets Inca remotely and regularly monitor and diagnose printers in the field, conducting diagnostics to determine how well they are performing and – sometimes even before customers have a problem – decide whether there is a need for engineering support.

Dashboards used by the Inca Digital Support Team provide a view of high-level data across machines throughout the world. A RAG (red, amber, green) screen allows the support team to identify and prioritise printers needing urgent attention. The team also supports distributors and provides back-up technical data should serious machine issues arise in their regions.

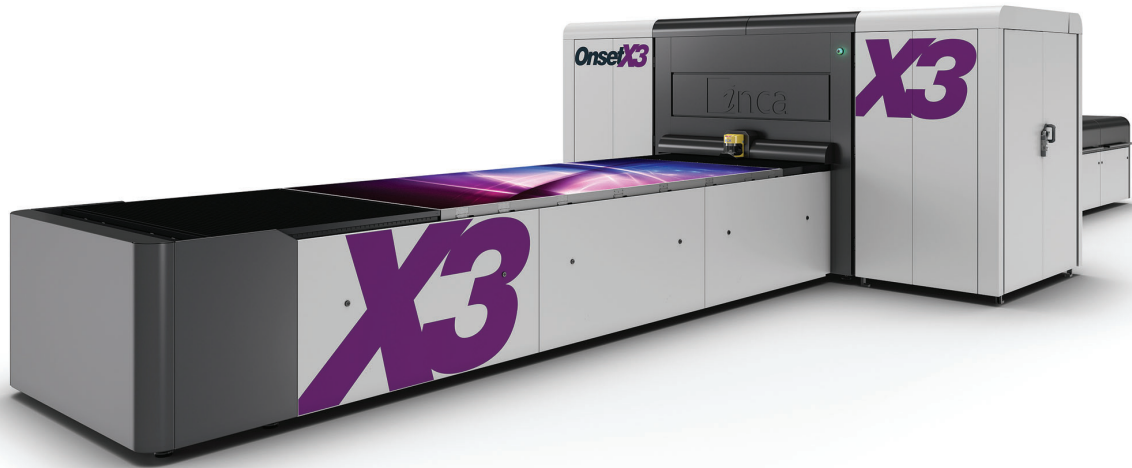


# 90%+

**Onset printers achieve  
90% uptime**

**75% of Onset  
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[www.fujifilm.com.au/powerofinkjet](http://www.fujifilm.com.au/powerofinkjet)