

Glass



“We have been using Xaar printheads for several years and are delighted to launch an advanced digital glass decoration machine using the Xaar 2001 to deliver the highest throughput levels in the industry today.”

Javier Fernández
Technical Director at Tecglass

Xaar 1003 / Xaar 2001+

Industrial reliability

Ultimate versatility

Outstanding print quality

The transition to digital glass printing

Year on year, the global market for printing on glass has grown steadily. Smithers Pira estimates that the printing of flat sheet glass (for architectural use, display screens and hollow containers such as vases*) was worth \$908 million in 2017 and had been experiencing an annual growth rate of 8% since 2012. Glass printing using digital inkjet technology has been growing much faster (at least three times that of the sector as a whole) and will be the major driver for the sector's expected growth over the next 5 years.

This growth is driven by the increasing demand for consumer choice and mass-customisation, the need to minimise waste and pollution as well as the need to reduce supply chain costs. Also relevant has been the development of inkjet inks that can endure the rigours of UV exposure, extreme temperature and weather conditions. Consequently there is a requirement for new digital printing methods which are capable of delivering short print runs quickly and economically whilst minimising the impact on the environment.

Enabling digital glass printing

There are several benefits of using digital inkjet printing in both the architectural glass and the automotive glass markets. By enabling digital processes which replicate screen printing methods, while eliminating the storage costs associated with screen printing, Xaar inkjet printheads allow glass processors to economically print one-off designs and small batches, as well as customised runs for highly creative glass panels which stand out from the competition.

Xaar's printhead portfolio is capable of reliably printing a wide range of demanding fluids due to a number of industry-proven technologies. For automotive glass suppliers seeking to enhance glass substrates with logos or variable data, our printheads are compatible with inks that offer the necessary optical density, chemical durability and abrasion resistance. The ability to print complex fluids to provide increased functionality such as conductive, anti-slip and energy efficiency properties for architectural structures, partitions or splashbacks extends the value which glass processors can add to product ranges.

* Note that these figures exclude packaging bottles and jars, automotive windscreens and touchscreen displays.

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Industrial reliability

Xaar's printhead portfolio for glass printing benefits from an unrivalled combination of technologies, which deliver industrial reliability, outstanding print quality and maximum uptime.

- TF Technology ink recirculation continually moves ink past the back of each nozzle at a high flow rate, removing unwanted air bubbles and minimising sedimentation, particularly important when using heavily pigmented, glass frit-based inks and high viscosity fluids
- XaarGuard minimises ink build-up on the nozzle plate, ensuring the longest maintenance-free production runs – typically once per shift or less
- Tuned Actuator Manufacturing enables uniform print quality across all printheads in a print bar, making the replacing and balancing of printheads within a bar easier and quicker.

Ultimate versatility

Already proven with challenging fluids in the harsh environment of ceramic tile printing, the Xaar 1003 and Xaar 2001+ printhead families are the most versatile for glass decoration.

- Xaar actively partners with a wide range of ink manufacturers to support the development of high quality ink solutions for its printheads
- In addition to the portfolio of approved inks, Xaar also works closely with customers and ink manufacturers to formulate bespoke ink and specialist fluid solutions to meet specific application requirements
- With this broad ink compatibility, ranging from digital ceramic inks to fluids with functional properties and other specialised inks, Xaar technology enables you to produce creative designs and enhance product performance.

Outstanding print quality

With six variants, 360 dpi or 720 dpi options and the unique High Laydown Technology, the Xaar range of printheads can meet all your requirements for glass decoration and effects.

- With 720 dpi resolution, the Xaar 2001+ printhead sets a new print quality standard in digital glass decoration, delivering fine details, strong colours and vibrant designs with maximum impact
- A wide drop size range combined with up to 8 greyscale levels provides smooth tones and high effective print resolution
- Xaar's High Laydown Technology enables the deposition of large quantities of fluid, even in a single pass, increasing the speed at which the ink can be applied to the substrate
- At 25 m/min, the Xaar 2001+ GS12 C in High Laydown mode can deliver up to 170 g/m², over three times more fluid than in standard mode
- Other benefits of High Laydown Technology include producing a high opacity finish, creating tactile embellishments and jetting high viscosity fluids.



| Technical data | Xaar 1003 GS6 C/U | Xaar 1003 GS12 C/U | Xaar 1003 GS40 C/U | Xaar 2001+ GS6 C/U | Xaar 2001+ GS12 C/U | Xaar 2001+ GS40 C/U |
|----------------------------|----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|
| Active nozzles | 1000 | 1000 | 1000 | 2000 | 2000 | 2000 |
| Print swathe | 70.5 mm | 70.5 mm | 70.5 mm | 70.5 mm | 70.5 mm | 70.5 mm |
| Number of fluid paths | 1 | 1 | 1 | 1 or 2 | 1 or 2 | 1 or 2 |
| Nozzle density | 360 npi | 360 npi | 360 npi | 720 npi | 720 npi | 720 npi |
| Ink type* | Oil, UV, solvent | Oil, UV, solvent | Oil, UV, solvent | Oil, UV, solvent | Oil, UV, solvent | Oil, UV, solvent |
| Drop volume* | 6 to 42 pL | 12 to 84 pL | 40 to 160 pL | 6 to 42 pL | 12 to 84 pL | 40 to 160 pL |
| Max number of grey levels* | 8 | 8 | 5 | 8 | 8 | 5 |
| Typical firing frequency* | 6, 12, 27 kHz | 6, 12, 27 kHz | 6 kHz | 6, 12, 27 kHz | 6, 12, 27 kHz | 6 kHz |
| Dimensions (WxDxH) | 125x30x60 mm | 125x30x60 mm | 125x30x60 mm | 132x50x105 mm | 132x50x105 mm | 132x50x105 mm |

* Dependent on ink used and system integration



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