

# Xaar 2002 printhead

Plug and play with exceptional print quality and reliability



# XAAR

# Introducing the Xaar 2002

The new features incorporated into the Xaar 2002 deliver a number of advantages such as quicker set up time, easier installation and reduced printer downtime.

In particular, new alignment features and the nozzle consistency provided by individually lasered nozzles improve colour density and uniformity across the print swathe. Drop volumes are more consistent from nozzle to nozzle, drop to drop and printhead to printhead.

AcuChp (balanced actuator selection and individual chip trimming) provides out of box uniform colour tone. Printhead to printhead colour density variation is reduced and colour density uniformity across the print bar swathe is improved.

With a print resolution of 720 dpi, the Xaar 2002 delivers the highest print quality standard in digital inkjet for sharp edges and clean, crisp text or pattern edges.

In addition, this printhead incorporates all of Xaar's unique technologies including the industry leading TF Technology ink recirculation and Ultra High Laydown printing capabilities of up to 240g/m<sup>2</sup>.

## Xaar 2002 highlights

- Industry leading TF Technology ink recirculation
- Exceptional print quality, 720dpi resolution
- XaarDOT 6 to 400pL drop sizes
- Ultra High Laydown printing capabilities – up to 240g/m<sup>2</sup>\*
- Quick and easy plug and print installation
- Out of the box uniform colour tone
- Reliable and robust ink compatibility
- Customisable
- Serviceable

\*Dependent on dpi



## Key features of the Xaar 2002

### Out of the box exceptional print quality for flat tints and smooth tones

- Drop-in plug and print features ensure installation and set-up is quick. Using printhead alignment, tight mechanical tolerances allow the printheads to be easily dropped into the printbar
- New alignment features and the nozzle consistency provided by individually lasered nozzles improve colour density and uniformity across the print swathe. Drop volumes are more consistent from nozzle to nozzle, drop to drop and printhead to printhead
- AcuChp Technology (balanced actuator selection and individual chip trimming) provides out of box uniform colour tone, colour density variation is reduced and colour density uniformity across the print bar swathe is improved

- Advanced Tuned Actuator Manufacturing (TAM2) enables uniform print quality across all printheads in a print bar, making replacing printheads and balancing print bars quick and easy.

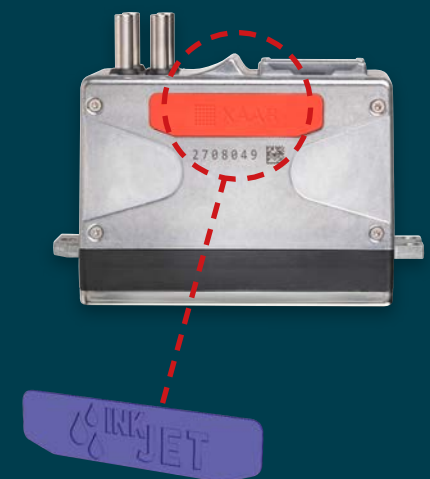
**These specifications can vary according to the integration of the Xaar 2002 printhead, system set-up, specific operating conditions of the printer in the field and the ink used.**

### Serviceable

- Ability to recover more printheads by replacing flexible circuits, gaskets and screws with the Xaar 2002 service pack
- Servicing a printhead can be more cost effective than a new printhead, reducing total cost of ownership and increasing return on investment
- Fixing/repairing printheads locally to the user reduces impact of shipping and manufacturing replacement units.

### Product customisation

- Put your own logo / branding onto the printhead to help supply for added assurance.



# Unrivalled printing capability with Xaar technology



Xaar's TF Technology together with the unique Hybrid Side Shooter printhead architecture enables fluids to flow directly past the back of the nozzle during drop ejection at very high flow rates.

- Nozzles are continuously primed, the printhead stays operational and the nozzles keep firing
- Sedimentation and nozzle blocking are prevented, particularly in heavily pigmented inks
- Any air bubbles and unwanted particles in the ink are carried away
- Reliability is improved, even in the harshest industrial environment
- Jetting is significantly more reliable compared to alternative printhead designs\* (where convoluted ink flow paths means recirculation is close to, but not at, the back of the nozzle)
- Startup after periods of idle time is trouble free.

\*See Xaar's White Paper **What comes around, goes around** which details experiments supporting the statements here.



Xaar's High Laydown Technology enables a range of new applications, thanks to its ability to deposit large quantities of fluid in each pass.

For packaging, labels and commercial print, it is capable of printing very high levels of UV inks or high build varnish in a single pass for tactile embellishments. In addition, the technology satisfies dimension specifications for printing Braille and complies with European standards for tactile warning triangles on labels, without the complexity of screen printing.

High Laydown Technology delivers unprecedented ink discharge rates for gloss and adhesive effects on ceramic tiles, so that effects can be printed at high line speeds.

For additive manufacturing applications, High Laydown Technology offers increased printing productivity which significantly accelerates build rate for parts and the ability to print a broader range of fluids including higher viscosity materials; this ultimately results in tougher 3D printed parts than those printed with standard inkjet technology.

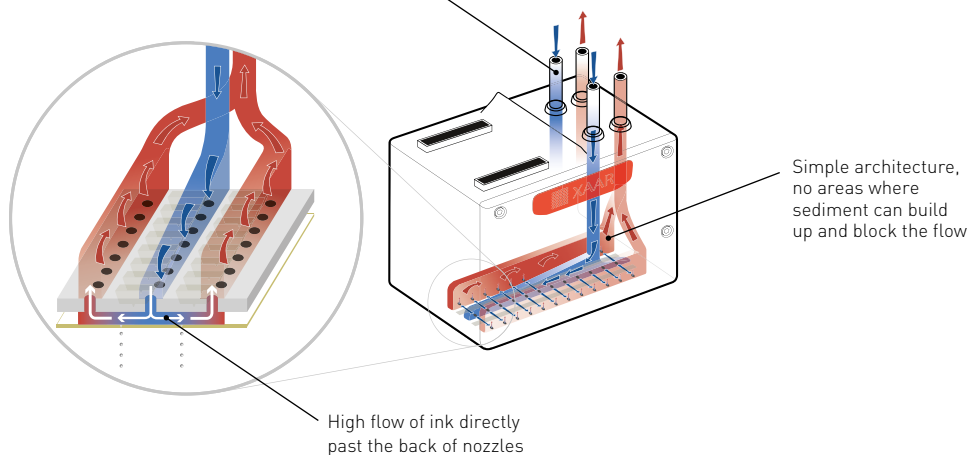
## Ultra High Viscosity

Typically, inkjet is well known for being limited to jetting fluids of around 10 to 25 cP. Xaar technology, however, is capable of jetting much higher viscosities up to 100 cP (Ultra High Viscosity combined with Xaar's High Laydown Technology).

### Ultra High Viscosity jetting opens up a range of new inkjet possibilities:

- Higher particle loading and particle sizes for increased colour gamut, opacity and special effects (for graphics, ceramic tile and glass printing)
- Ability to print higher molecular weight photopolymers leading to increased toughness and flexibility for printed materials (useful in Advanced Manufacturing and 3D printing)
- Reduced spreading for better edge definition on non-porous substrates (useful for example in glass printing applications)
- Printing a wider range of functional fluids (such as paint, adhesives and solder masks).

Symmetrical architecture so reverse flush (also called backflush) can be used to ensure there are no unwanted particles. This is a useful feature when using fluids with a high solid content



# Choose your printhead!



## Three printhead variants:

### Xaar 2002 Plus

- For print applications using oil-based inks
- A robust, industrial printhead with all of the Xaar technologies
- Delivers a high print performance.

### Xaar 2002 Premium

- For applications where mechanical alignment of the printhead is key
- Enhanced drop in alignment features means set up time is minimal
- Compatible with oil-based and solvent-based inks, glass frits and soluble salts.

### Xaar 2002 Advanced

- Outstanding print quality
- Most advanced performance in the range
- Fluid compatibility includes UV, oil-based and solvent-based inks plus glass frits and soluble salts
- Exceptional drop placement accuracy and print uniformity.



## Product configurator

	Xaar 2002 Plus			Xaar 2002 Premium			Xaar 2002 Advanced		
<b>Features</b>									
TF Technology									
Xaar AcuChp									
XaarDOT									
XaarGuard									
OEMID									
In-line filter									
<b>Optional extra</b>									
UV in-line filter									
Customisation									
Serviceable									
<b>Materials robustness</b>									
Oil based									
Glass frits									
Soluble salt									
Solvents									
UV curable coating									
UV curable decoration									
<b>Performance</b>									
<b>Drop sizes (pl)</b>	<b>6</b>	<b>12</b>	<b>40</b>	<b>6</b>	<b>12</b>	<b>40</b>	<b>6</b>	<b>12</b>	<b>40</b>
Maximum frequency up to (kHz)*	36	36	24	36	36	24	36	36	24
Maximum productivity (g/ m <sup>2</sup> ) @1.3g/ cm <sup>3</sup>	22	44	85	22	44	85	22	44	85
High Laydown (g/ m <sup>2</sup> )		240			240			240	
<b>Drop in capability</b>									
X-Datum to 1st printing nozzle (µm)	±10	±20	±20	±5	±5	±10	±5	±5	±10
1st to last printing nozzle (µm)	±4	±11	±11	±4	±4	±11	±4	±4	±11
Centre line to 1st row parallelism (µm)	±50	±50	±100	±50	±50	±50	±25	±25	±50
<b>Dot accuracy</b>									
X (3σ)	••	••	••	•••	•••	••	••••	•••	••
Y (3σ)	•	•	•	•	•	•	••	•	•
<b>Print uniformity</b>									
Dot uniformity variation (%)	•	•	•	••	••	•	•••	••	••

\*Exact frequency depends on the fluid and the waveform.

# XAAR

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