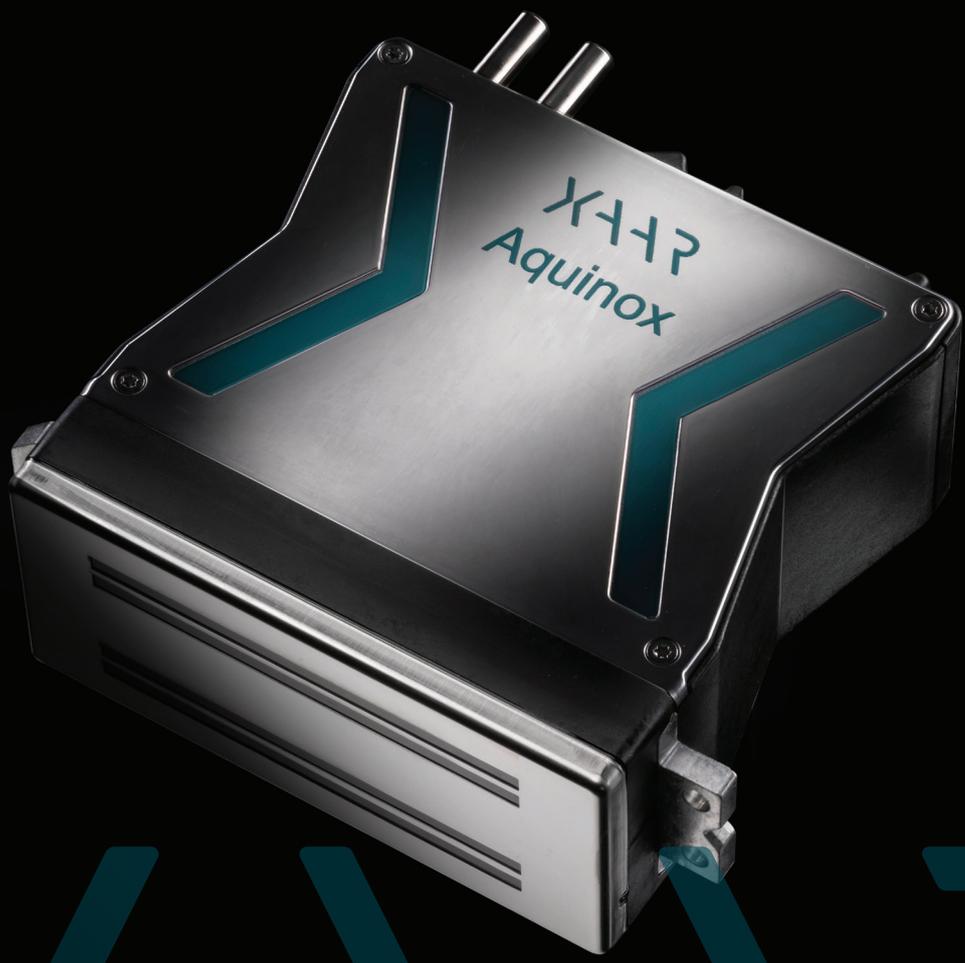


Xaar Aquinox

Join the water-based revolution



X A A R

Introducing the Xaar Aquinox

Engineered to deliver exceptional reliability, the Xaar Aquinox is a revolutionary aqueous printhead that's truly built to last.

Exceptional reliability

With our patented and revolutionary new aQ Power Technology, take advantage of enhanced reliability when printing with water-based fluids.

- aQ Power is a combination of ground-breaking technologies, including a novel drop ejection technique, which work together to deliver enhanced reliability when printing with water-based fluids, increasing lifespan and robustness
- TF Technology recirculation keeps the fluid in constant motion directly past the back of the nozzle, preventing sedimentation, minimising temperature variation across the printhead, eliminating print density variations and nozzle blockages. Any air bubbles and unwanted particles in the fluid are carried away, radically improving reliability, even in the harshest industrial environment
- The open architecture with a simple fluid path ensures a continuous fluid supply, extending nozzle open times for quicker start-ups, reducing maintenance and therefore increasing uptime
- AcuChp Technology and Tuned Actuator Manufacturing improves colour performance and print uniformity, for high definition image resolutions
- Compatible with aqueous fluid types and with a wide environmental operating window.

Transform productivity

With the super-fast speeds, high native resolution of 720npi and the High Laydown Technology of the Xaar Aquinox, printing with aqueous fluids has never been so effective or versatile.

- High native resolution of 720npi and firing frequency of up to 48kHz enables high fluid laydown with maximum productivity. With speeds of over 100m/min* combined with plug and print, drop-in printhead alignment, you can maximise production uptime
- High Laydown Technology increases the drop size that the printhead can jet, useful for printing textiles, highly absorbent substrates or thick film coatings, plus a broad range of aqueous fluids and viscosities to simplify processes and reduce machine footprint.

Reimagine creativity

The Xaar Aquinox allows you to print brighter and bolder, and bring your design to life with an extended colour gamut, improved versatility and precision.

- Ultra High Viscosity Technology allows you to jet viscosities of up to 100cP. This enables an extended colour gamut and fluids with larger particles and more pigment to be jetted for higher opacity, making colours more vibrant and whites and blacks stronger
- Exceptional 720npi print resolution quality and performance across a range of applications including textiles, ceramics and packaging
- Compatible with a wide range of aqueous fluids to create tactile effects, neon or glow in the dark designs to take creativity to new heights.

Future-proof your business

From less water and energy consumption to reduced chemicals in waste water, the Xaar Aquinox helps you future-proof your business and be kinder to the environment.

- Reduce energy and water consumption and simplify production processes for lower production costs, for example, quicker drying times due to less water content in fluid
- The Xaar Aquinox uses bulk piezo technology with our patented chevron architecture for a very energy efficient operation, reducing the power requirements for printers and end users
- Future-proof your business by using more eco-friendly water-based fluids to reduce chemicals in waste water, be kinder to environment and adhere to any forthcoming regulations, meeting emerging environmental standards.

Xaar Aquinox highlights

- A highly durable and reliable printhead incorporating Xaar's aQ Power Technology
- Ultra High Viscosity Technology for jetting fluids up to 100cp
- Unbeatable print colour uniformity with AcuChp Technology
- TF Technology fluid recirculation enabling reliable jetting of highly pigment inks
- XaarGuard nozzle guard increases printhead robustness and minimises ink build up



* At 1dpm, fluid dependent

Unrivalled printing capability with Xaar technology



Xaar's aQ Power is a combination of ground-breaking technologies:

- A redesigned internal architecture which is optimised for aqueous fluids
- New materials compatible with aqueous fluids and working range of acceptable pH levels extended
- Revolutionary new drive system enabling optimum drop ejection for aqueous fluids, significantly extending nozzle open time, increasing lifespan and durability.



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)
- Start-up after periods of idle time is trouble free.



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

For ceramics, it is capable of printing very high levels of water-based inks in one pass for high build effects and tactile embellishments as well as aqueous glazes.

In textile applications, High Laydown Technology can be used for very absorbent substrates such as carpets and home furnishings for increased coverage and colour saturation.



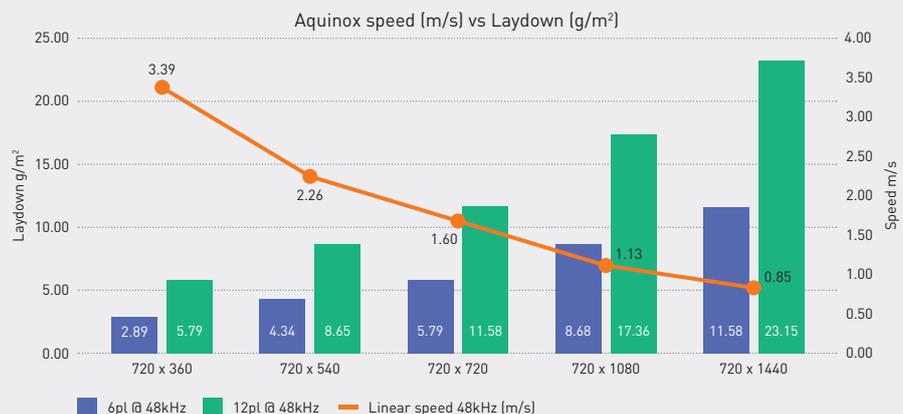
Typically, inkjet is well known for being limited to jetting fluids of around 10 to 12cP. Xaar technology, however, is capable of jetting much higher viscosities up to 100cP.

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
- Reduced spreading for better edge definition on non-porous substrates
- Printing a wider range of functional fluids (such as paint, adhesives and solder masks).

Xaar Aquinox speed vs fluid laydown

The graph on the right shows the fluid laydown that the Xaar Aquinox can achieve at varying speeds and resolutions, based on using all 720 nozzles and at a maximum firing frequency of 48kHz (fluid dependant).



Xaar Aquinox

Applications

Ceramics
Corrugates
Coding & marking
Textiles
Packaging



Product configurator

Xaar Aquinox

Features

TF Technology	•
aQ Power Technology	•
Ultra High Viscosity Technology	•
High Laydown Technology	•
AcuChp Technology	•
XaarDOT	•
XaarGuard	•
OEM ID	•
In-line filter	•

Optional extra

Customisation	•
Serviceable	•

Ink compatibility

Water-based acid dye	•
Water-based reactive dye	•
Water-based dye sublimation	•
Water-based dispersive	•
Water-based pigment	•

Printhead physical properties

Grey levels (up to)	8
Swathe width (mm)	70.5
No. of rows	4
Nozzles per row	500
Nozzle resolution (dpi)	720
No. of fluid paths	2

Printhead performance

	6pL	12pL
Maximum frequency up to (kHz)	48	48
Maximum productivity (7gls @ 1.2g/cm ³ [g/m ²] 720dpi x 720dpi)	35	70
High Laydown up to (g/m ²)	-	230

Fluid viscosity

Viscosity range (cP)	Up to 100	Up to 100
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Drop in capability

X Datum to first printing nozzle (µm)	±20	±20
First to last printing nozzle (µm)	±4	±4
Centre to first row parallelism (µm)	±10	±10

Dot placement accuracy

X (3σ) (µm)	✓✓	✓✓
Y (3σ) (µm)	✓	✓

Print uniformity

Dot size variation (%)	✓✓	✓✓
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