Xaar *Proton*

Delivering outstanding print quality, superior throughput and exceptional value

The Xaar ***Proton*** is a premium quality, wide-swathe (53.7mm) printhead which delivers **outstanding print quality** in three drop volume options. The binary 35 and 60 picolitre variants deliver the best combination of throughput and print quality for a range of applications, including wide-format graphics and coding & marking. The 15 picolitre variant caters for the smaller drop indoor and high quality outdoor wide-format graphics markets and adds greyscale capability to the range. Lockable ink and electrical connections together with intelligent on-board electronics ensure **easy integration** and reduced time-to-market. Through expert design and advanced manufacturing techniques the Xaar ***Proton*** is able to deliver **high productivity** using the **latest Xaar technology**. This printhead, developed in response to customer feedback, incorporates a number of features to ensure **low cost of ownership**. The Xaar ***Proton*** delivers excellent and consistent print performance enabling users to achieve high print quality without compromising on speed.

The Xaar ***Proton*** is the latest printhead from Xaar, a world leader in the development and manufacture of piezoelectric drop-on-demand inkjet technologies. The company, established in 1990, is headquartered in the UK, and has offices in Sweden, USA, Brazil, China and India. Today, Xaar's state-of-the-art printhead manufacturing lines in Europe are among the most innovative in the world.

XAAR®

XAAR INNOVATIVE TECHNOLOGY THROUGH AND THROUGH

Xaar *Proton*

Outstanding print quality

- The Xaar ***Proton*** is available in three native drop volume options: 15, 35 and 60 picolitres. These variants have been developed to deliver the best combination of throughput and print quality for a range of applications. The Xaar ***Proton 15+*** has greyscale capability, allowing a range of drop sizes to be printed with a single printhead for a wider variety of print applications
- Nozzles are individually lasered (using the same techniques as the Xaar 1001) giving better nozzle uniformity, leading to more accurate drop placement and formation, and superior print quality
- Internal temperature sensing and automatic voltage compensation ensure high reliability and consistent drop volume, giving uniformity of colour within a range of ambient environments. The Xaar ***Proton 15+*** adds internal printhead heating and heater control. This allows the printhead to work with a wide range of ink types and viscosities and through varying ambient temperatures, enabling consistent high print quality and reliability all year round
- Optimised drop speed is achieved by tuning the waveform for Xaar-approved inks. As a result the Xaar ***Proton*** can combine high drop placement accuracy, optimum throw distance and excellent reliability.

Easy integration

- A single voltage is all that is required to drive the printhead due to the intelligent on-board electronics. This enables simple integration and installation of the printhead giving a quicker time-to-market and increased uptime
- Luer lockable ink fittings and lockable electrical connections enable an easy, accurate and secure printhead installation, preventing mechanical and electrical damage, and ink spillage
- Two ink ports offer a range of ink supply configurations for ease of priming and maintenance. This provides the potential for ink recirculation giving increased reliability.

High productivity

- Through expert design of the core Xaar actuator, the Xaar ***Proton*** achieves a high firing frequency, delivering fast and useable linear speeds
- The 15, 35 and 60 picolitre native drop volumes combined with its high firing frequency mean that the Xaar ***Proton*** can deliver throughput equivalent to a printhead with a larger nozzle count
- 382 nozzles at 180 npi over a 53.7 mm swathe width deliver both single and multi-pass application solutions in a compact print engine.

Latest technology

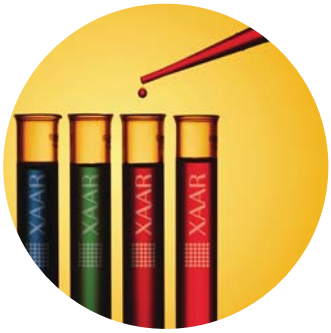
- The Xaar ***Proton*** uses the latest nozzle processing techniques to deliver better print quality and longer throw distances
- Xaar's latest "chevron" actuator design gives high efficiency and consistent drop formation, resulting in outstanding print quality
- Multiple waveforms can be stored in the printhead enabling configuration options for different fluid types, applications and print characteristics
- Xaar's low energy drop ejection method enables efficient drop formation with high drop placement accuracy
- Ink and waveform combinations are continually being developed to ensure the best possible performance is delivered.

Low cost of ownership

- The robust printhead casing protects against costly accidental mechanical, electrical and chemical damage
- An integrated internal filter increases the product lifetime by protecting the actuator and nozzles from contamination through the ink path
- The Xaar ***Proton's*** recessed nozzle plate protects against printhead damage caused by media crash or other mechanical impact.

Physical attributes	Xaar *Proton* family	Physical attributes	Xaar *Proton 15+*	Xaar *Proton 35*	Xaar *Proton 60*
Active nozzles	382	Printhead weight (dry)	120 g	120 g	120 g
Print swathe width	53.7 mm	Ink type	UV, solvent	Solvent, UV, Oil	Solvent, UV, Oil
Nozzle pitch	141 µm	Drop volume *	15, 30 or 45 pl**	35 pl	60 pl
Drop velocity*	5 m/s	Typical firing frequency *	15 kHz	9.5 kHz	7.0 kHz
Nozzle density (nozzles per inch)	180 npi	Dimensions (WxDxH)	86x22x75 mm	86x22x75 mm	86x22x75 mm

* Dependent on ink used and system integration ** Greyscale capability at four levels



Approved inks

Xaar actively partners with a wide range of ink manufacturers to develop high-quality ink solutions for its printheads. The Xaar ***Proton*** is designed to be compatible with a range of solvent, oil and UV curable inks.

External drive electronics

Xaar has approved electronics partners with well-established drive electronics, reducing the cost of integration and time to market, and making future upgrades possible.

XAAR®

Head Office / Europe + 44 1223 423 663 info@xaar.com
Brazil + 55 11 4033 5614 americas@xaar.com
USA + 1 770 509 4888 americas@xaar.com
Hong Kong + 852 3690 8555 info@xaar.com
India + 91 124 435 4055 india@xaar.com
www.xaar.com

Issue 6 February 2013