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.
### 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.

### 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.

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### Physical attributes

<table>
<thead>
<tr>
<th>Physical attributes</th>
<th>Xaar Proton 15*</th>
<th>Xaar Proton 35</th>
<th>Xaar Proton 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active nozzles</td>
<td>382</td>
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<tr>
<td>Print swath width</td>
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<td>53.7 mm</td>
<td>53.7 mm</td>
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<tr>
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<tr>
<td>Drop velocity*</td>
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<tr>
<td>Nozzle density</td>
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<td>180 npi</td>
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<tr>
<td></td>
<td>(nozzles per inch)</td>
<td>(nozzles per inch)</td>
<td>(nozzles per inch)</td>
</tr>
</tbody>
</table>

*Dependent on ink used and system integration

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