

Press Information

Kyocera launches new inkjet printhead “KJ4A-EX1200-RC” with ink recirculation

“KJ4A-EX1200-RC” is UV-ink compatible with 1200 dpi resolution, offering both high-resolution printing and high productivity printing for labels and many other applications.

Kyoto/London, 20th February 2025. Kyocera Corporation has developed a new inkjet printhead with ink recirculation technology at the nozzle. Available in May 2025, the KJ4A-EX1200-RC, offers both high-resolution printing and high productivity through Kyocera’s unique flow channel design technology. It supports a wide range of applications, including labels, and is compatible with UV ink.



1200 dpi inkjet printhead with ink recirculation KJ4A-EX1200-RC

Model	KJ4A-EX1200-RC
Dimensions	200.0 × 55.5 × 79.15 mm (Width x Depth x Height)
Maximum print speed	81.3 m/min
Resolution	1200 dpi
Effective print width	108.27 mm
Maximum driving frequency	64 kHz
Maximum drop volume	4.0 pL
Minimum drop volume	2.0 pL
Compatible ink	UV
Development facility	Kagoshima Kokubu Plant (Japan)

Main features

1. Ink recirculation at the nozzle enables stable printing.
2. High-resolution of 1200 dpi and improved productivity through high drive frequency for optimized productivity.
3. High print quality, through Kyocera's unique monolithic piezo actuator.¹

Development background

Digital printing offers the advantage of immediate, customizable printing in any quantity while reducing environmental impact by eliminating the liquid waste that occurs in plate-cleaning processes. As a result, the demand for digital printing, including inkjet printing, is rapidly expanding from traditional paper media into new applications such as textiles, labels, food-grade packaging, and building materials.

As these applications of inkjet printhead expand, the diversification of ink is increasing. In addition to increased speed, high-resolution images, and high durability, there is a need for a printhead that can handle a wide variety of inks. In the label printing market, in particular, emphasis has been placed on fine printing for a wide variety of languages and fine printing details such as smooth gradation. The amounts of droplets need to be optimized to achieve both high-resolution and high density, and print speeds need to continue to increase.

The robust design of Kyocera's printhead allows stable, continuous printing to enhance productivity in industrial printing operations. As a result, Kyocera will lead the digitalization of the printing industry by reducing operator workload, enhancing labor efficiency, and improving environmental impact.

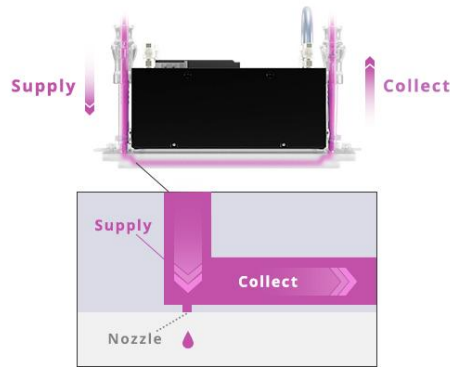
Features

1. Ink recirculation at the nozzle enables stable printing.

Kyocera's unique technology recirculates ink around the nozzle and enables stable printing by controlling the temperature uniformly and suppressing sedimentation of ink components. These features allow stable printing with various kinds of inks while reducing routine maintenance, such as printhead cleaning when rebooting a printer. In addition, a water-cooling system² is the standard specification for this product, and the water-cooling mechanism equalizes the head temperature to ensure continuous printing with stable print quality.

¹ Piezo actuator: specialized component that generates ink-jetting power using the piezoelectric effect of fine ceramics.

² Heat-transfer method to cool the driving board installed on the printhead.



Ink recirculation technology around the nozzles

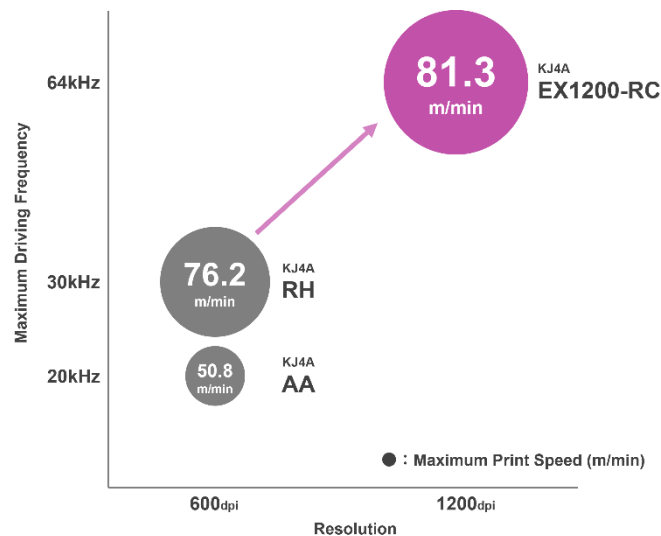


Cooling area with water cooling system

Water cooling system

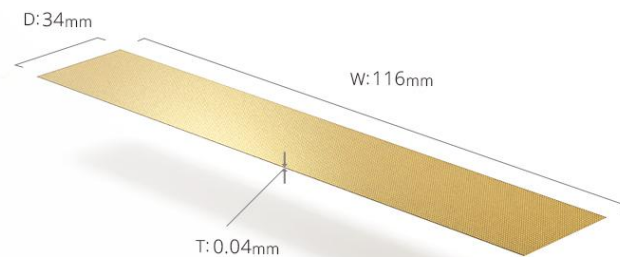
2. High-resolution of 1200 dpi and improved print speed and drive frequency for optimized productivity.

In addition to the resolution increase to 1200 dpi, the drive frequency and print speed have also been improved compared to Kyocera's 600 dpi printhead. The new model optimizes both high-resolution and productivity to meet the demands of the label market.



3. High print quality, through Kyocera's unique monolithic piezo actuator¹

Kyocera has developed a large monolithic piezoelectric actuator, using proprietary material design technology for dense polycrystalline ceramic actuators, and manufacturing technology for thin piezoelectric ceramic substrates. Kyocera introduced this piezo actuator (width:116 mm x depth: 34 mm x thickness: 0.04 mm) in a 1200 dpi printhead with UV ink. By using a large monolithic piezoelectric actuator, the printhead provides uniform images and higher print quality.



*Image of the piezoelectric actuator on KJ4A-EX-1200RC

Monolithic piezoelectric actuator

Through its advanced technologies, Kyocera will expand the possibilities of digital printing and contribute to the sustainability of the global printing industry.

High-resolution images are available for download by clicking on the following link:

<https://spgroup.box.com/s/sesu9whiezt640ddqdr9ynq91l9h0ty>



For more information on Kyocera: uk.kyocera.com

About Kyocera

Kyocera has been successful in Europe for over 50 years. From its European headquarters in Esslingen am Neckar, KYOCERA Europe GmbH operates 28 sites including manufacturing facilities, with products ranging from fine ceramics, electronics, automotive, semiconductor and optical components to industrial tools, LCDs, touch solutions, industrial printing components, solar systems and consumer goods such as kitchen and office products.

KYOCERA Europe GmbH is a company of the KYOCERA Corporation headquartered in Kyoto/Japan, a world leader in semiconductor, industrial and automotive components as well as electronic components, printing and multifunction systems, and communications technology. The technology group is one of the world's most experienced manufacturers of smart energy systems, with more than 45 years of industry expertise. The Kyocera Group comprises 292 subsidiaries (31 March 2024). In England, Kyocera has a subsidiary in Frimley, KYOCERA Fineceramics Ltd. With around 79,200 employees, Kyocera generated net annual sales of around EUR 12.29 billion in the 2023/2024 fiscal year.

Kyocera is ranked 874 on Forbes magazine's 'Global 2000' list for 2024, and ranked as 'The 100 Most Sustainably Managed Companies in the World' according to the Wall Street Journal. For the second year in a row, Kyocera qualified for the Dow Jones Sustainability Index (Asia-Pacific). As well, Kyocera receives a Bronze rating on EcoVadis Sustainability Survey and was acknowledged as a 'Top 100 Global Innovator 2023' for the second consecutive year, being one of the world's leading innovators, for the eighth time by Clarivate.

Kyocera also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation — established by Kyocera founder Dr Kazuo Inamori — to individuals worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (equivalent to approximately €596,500 per prize category).

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