

Press Information

Kyocera develops 1200-dpi Inkjet Printheads with Ink Recirculation Structure

New Model KJ4B-EX 1200 offers improved speed resolution and stability

Kyoto/London, January 22nd, 2021. Kyocera has announced the development of a next-generation inkjet printhead offering high-speed, high-resolution printing for a wide range of printing applications, with a focus on graphics. Kyocera's Model KJ4B-EX 1200 printhead will be available in December 2020.



Model KJ4B-EX 1200

Model	KJ4B-EX1200	Maximum jetting frequency	80 kHz
Dimensions	200 x 52 x 141.1 mm (Width x Depth x Height)	Maximum drop volume	2.8 pl
Maximum print speed	100 m/min	Minimum drop volume	1.5 pl
Resolution	1200dpi	Compatible ink	Aqueous
Effective print width	108.27 mm	Development facility	Kagoshima Kokubu Plant



Kyocera's KJ4EX series of printheads utilize large integrated piezo actuators¹ that enable higher-resolution printing by homogenizing image quality inside the printhead. The series' first model, the 600dpi KJ4B-EX600 printhead, has been available since April 2020.

The KJ4B-EX 1200 is Kyocera's latest model for a wide range of printing applications, with a focus on graphics. Its 1200-dpi ink recirculation structure achieves high-resolution printing with 25% faster print speed than conventional models². Kyocera plans to gradually expand its lineup to include larger-drop-volume and UV compatible models.

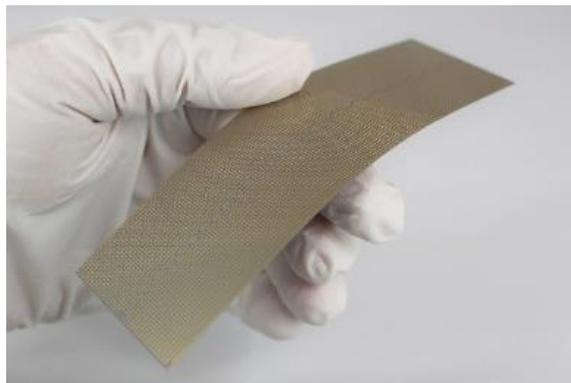
Development Background

Demand for digital printing continues to grow due to its productivity advantages and the environmental benefits realized by eliminating the need for printing plates, plate-cleaning chemicals, and liquid waste. Digital printing is being used not only for printing on paper, but also for a wide range of non-traditional media, including clothing, food packaging, and housing construction materials. Inkjet technology for these diverse media requires high-speed, high-resolution, and high durability printheads.

Main Features

1. Newly developed integrated piezo actuator achieves high resolution

Kyocera developed a large integrated piezo actuator using its proprietary material design technology for dense polycrystalline ceramic actuators and manufacturing process technology for thin piezoelectric ceramic substrates. By using a single large, integrated piezo actuator instead of multiple piezo actuators per printhead, Kyocera's new design allows image homogenization within the printhead and achieves higher resolution.



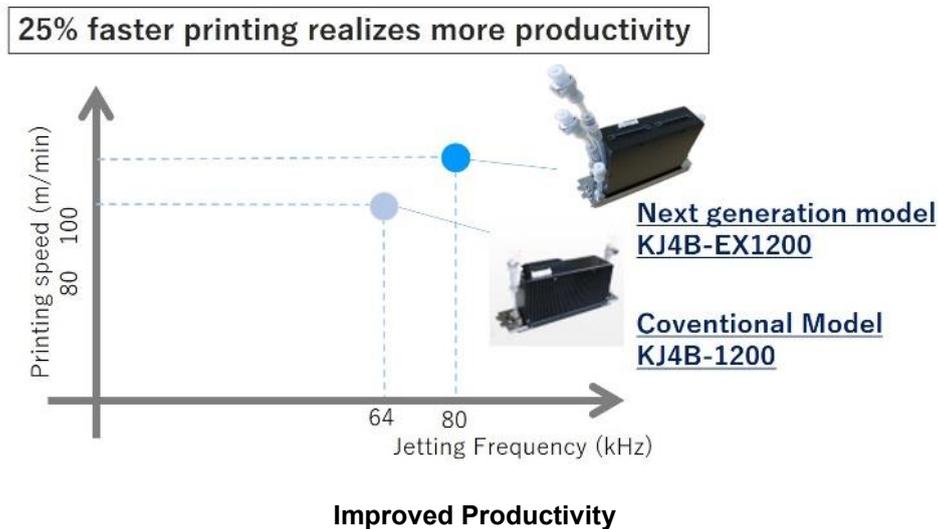
Integrated piezo actuator

¹ components that generate ink-jetting power using the piezoelectric effect of fine ceramics

² Kyocera's conventional products (ink non-recirculation model)

2. Faster jetting frequency and improved jetting stability

By optimizing the ink channel design and the head structure, Kyocera has improved the printhead's maximum jetting frequency and ink-jetting stability. The maximum jetting frequency has been increased to 80 kHz, which is 25% faster than conventional models, enabling single-pass printing at up to 100 m/min when printing in the 1200 dpi feed direction.



3. Simpler, robust laminated structure for higher durability

Integrated piezo actuators allow for a simple and robust structure, which improves the strength, stability, and durability of the printhead.

4. Higher-definition image quality with stable jetting of smaller droplets

By incorporating an analog waveform circuit capable of achieving drive waveforms of arbitrary shapes, Kyocera's design generates a driving waveform suitable for stable ejection of extremely small droplets with a volume of just 1.5 pl. In addition, the influence on the jetting characteristics is minimized to attain stable, continuous high-speed printing by equipping a water-cooling structure to prevent the thermal environment of the circuit from influencing the temperature of the jetting component.



*Pixel size of 1200 dpi resolution

Droplet Volume



For more information on Kyocera: www.kyocera.co.uk

About Kyocera

Headquartered in Kyoto, Japan, KYOCERA Corporation is one of the world's leading manufacturers of fine ceramic components for the technology industry. The strategically important divisions in the KYOCERA Group, which is comprised of 298 subsidiaries (as of March 31, 2020), are information and communications technologies, products which increase quality of life, and environmentally friendly products. The technology group is also one of the most experienced producers of smart energy systems worldwide, with more than 40 years of know-how in the industry.

The company is ranked #549 on Forbes magazine's 2020 "Global 2000" listing of the world's largest publicly traded companies. With a global workforce of over 75,500 employees, Kyocera posted sales revenue of approximately €13,33 billion in fiscal year 2019/2020. The products marketed by the company in Europe include printers, digital copying systems, semiconductor-, fine ceramic-, automotive- and electronic components as well as printing devices and ceramic kitchen products. The KYOCERA Group has two independent companies in the United Kingdom: KYOCERA Fineceramics Ltd. and KYOCERA Document Solutions Ltd.

The company 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 (converted at approximately €828,000 per prize category).

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