Press information

New printhead supports commercial printing requiring low-volume, high-variety production at maximum- speed and resolution

KYOCERA Develops World's Fastest 1200×1200dpi KJ4B-Z Inkjet Printhead

Kyoto/Neuss, 24 April 2012 – Kyocera Corporation today announced that it has successfully developed the KJ4B-Z Series 1200×1200dpi high-resolution inkjet printhead, achieving the world's fastest[1] print speed of 80 meters per minute for an inkjet printhead — a key component in commercial inkjet printers.

The newly-developed KJ4B-Z Series 1200×1200dpi inkjet printhead achieves higher drive frequency by improved signal waveform that controls the piezo actuator which controls ink ejection; and by improving the ink flow channel structure, Kyocera has achieved the world's fastest print speed of 80m/min. The KJ4B-Z Series printheads provide high-resolution printing due to the high-density arrangement of piezo actuators and ink nozzles through Kyocera's proprietary design and simulation technologies. Furthermore, the world's largest[2] effective print width of 108mm (4.25 inches) requires fewer printheads even for wide-format printing, which simplifies equipment design.

Development Background

Offset printing[3], which provides high-quality printing of text, photographs and illustrations, is the commercial printing industry's

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mainstream method for producing catalogs, brochures and various advertisements. However, printing small lot sizes presents challenges in terms of lowering cost and decreasing delivery time. There is increased demand in the industry to solve these challenges and support other needs including inventory reduction and variable print[4] functionality. As manufacturers develop equipment to provide higher-speed and higher-resolution printing, advanced performance is also required for the printheads used therein.

By developing the world's fastest, highest-resolution inkjet printhead, Kyocera strives to expand the application of on-demand commercial printing, reduce costs and shorten delivery time by contributing to the advancement of higher-speed and higher-resolution printing required in the commercial printing industry.

Product Features

1. World's fastest high-resolution printing

Achieving the world's fastest print speed of 80m/min. with 1200×1200dpi resolution, this printhead is capable of ejecting up to 64,000 drops of ink per second (at 64kHz drive frequency) from each ink nozzle, resulting in approximately 330 million drops per second from a head with 5,120 nozzles.

In addition, higher-resolution printing is made possible by the high-density design of piezo actuators and ink nozzles as well as by improving the ink flow channel structure to reduce the minimum ink drop volume to less than 2 picoliters[*5].

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2. Design functionality

Possessing the world's most effective print width of 108mm (4.25 inches) for a piezoelectric printhead, the KJ4B-Z Series simplifies equipment design by requiring fewer printheads for wide-format printing. It also allows for micron-level printhead alignment, as well as easier ink tubing and wiring adjustments.

3. High reliability

Breaking the world's fastest print speed record, this product also provides the same drive durability performance (ink ejection frequency) as conventional products. Furthermore, employing an externally sealed structure ensures the high reliability required for commercial printing.

[1] The world's fastest in single-pass inkjet printheads that print with a resolution of 1200×1200dpi, a width of 4.25 inches, and one head for feed direction. Based on research by Kyocera (as of April 1, 2012).

[2] For piezoelectric inkjet printheads with a resolution of 600dpi or higher. Based on research by Kyocera (as of April 1, 2012).

[3] A method by which the ink is printed on the media through an intermediate transfer member. High-quality printing is a characteristic of this printing method.

[4] Variable printing: A printing method by which individually unique data (e.g. personalized information) is printed on separate sheets.

[5] A picoliter is equal to 10^{-12} liter (0,000000000001).

For more information about Kyocera Printing Devices:

http://global.kyocera.com/prdct/tfc/index.html

About Kyocera

Headquartered in Kyoto, Japan, Kyocera Corporation is one of the world's leading

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manufacturers of fine ceramic components for the technology industry. The strategically important divisions in the Kyocera Group, which is comprised of 208 subsidiaries (as of March 31, 2011), are information and communications technologies, products which increase quality of life, and environmentally friendly products. The technology group is also one of the largest producers of solar energy systems worldwide.

With a global workforce of about 66,000 employees, Kyocera posted net sales of approximately €10.74 billion in fiscal year 2010/2011. The products marketed by the company in Europe include laser printers, digital copying systems, microelectronic components, fineceramic products and complete solar power systems. The Kyocera Group has two independent companies in the Federal Republic of Germany: Kyocera Fineceramics GmbH in Neuss and Esslingen and Kyocera Document Solutions in Meerbusch.

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 and groups worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (converted at present €500,000 per prize category).

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