

Press Release

World's fastest electrophotographic printing at 180m/min enabled by newly developed high-intensity LED chip

KYOCERA Develops High-Speed, High-Resolution LED Printhead

Kyoto/ Neuss, 28 Oktober 2009 — Kyocera Corporation (President: Tetsuo Kuba) today announced that with the development of its new SLH-Series LED printhead it has achieved the world's fastest*1 electrophotographic printing at 180m/min in 1200dpi high-resolution.

The printhead incorporates a newly developed high-intensity 1200dpi LED chip, that at 150 μ W (1mA drive current), produces four times more light than Kyocera's conventional models. This high-resolution printing is available at the world's fastest speed of 180m/min, with low power consumption. Theoretically, this means it is capable of printing more than 1,000 sheets of standard A4 size paper per minute. It also consumes just a quarter of the power of its predecessors operating at the same printing speed.

High-intensity LED chips provide the optimal light source for amorphous silicon photoreceptor drums*2 — the key device in high-speed electrophotographic printers. Use of LEDs has eliminated memory image and sensitivity shortage — problems that had to be overcome to allow for further improvements in printing speed — leading to the successful development of high-speed, high-resolution LED printheads.

The product is scheduled to launch in April 2010. A package with the amorphous silicon photoreceptor drum for high-speed printing will be released at the same time.

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Kyocera began supplying LED printheads for office document equipment in 1992. Starting with this industry leading product, the company will expand its business to the highly promising commercial printing market.

Kyocera will exhibit the product at the Japan Graphic Arts Show (JGAS) 2009 from October 6 (Tue.) - 10 (Sat.) at Tokyo Big Sight.

*1 World's fastest electrophotographic printing speed, based on research by Kyocera as of October 1, 2009.

*2 A photoreceptor drum is a photo conductor that revolves inside a printer and transfers toner to the paper. This device, previously a consumable item, has become a component with long service life due to Kyocera's use of amorphous silicon.

Product Outline

Product Name	SLH Series LED Printhead
Size	600×36×83 mm (Width × Depth × Height)
Production Site	Yohkaichi Plant (Shiga Prefecture, Japan)
Scheduled Launch	April 2010

Development Background

Electrophotographic printing is divided into two types depending on the optical source: laser printing and LED printing. Kyocera engages in development and production for LED printing, which provides the following benefits:

- 1.) Improvement in printing speed is possible because there is no constraint on mirror revolution speed.
- 2.) Higher-resolution printing is available as the optical path is short and beams are sharp.
- 3.) A complicated scanning mechanism is not necessary, which permits compact size and less noise.

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Moreover, in recent years the commercial printing market has witnessed a growing call for on-demand digital printing that permits low volume printing of a wide variety of content. Expectations have been raised for LED printheads as a solution for such demands. Kyocera has successfully developed a high-speed printing device as demanded by the commercial printing market by making use of its years of experience in printing devices.

Development Keys

For developing this new product, it was essential to build a high-intensity LED chip that enables high-speed printing. Kyocera employed its own thin-film formation technology to improve the configuration of light-emitting elements on the LED chip and optimize the electrode and wiring structure. This enabled the development of a high-intensity LED with improved luminous efficiency in the low current range, which is required in higher-speed printing. For this LED, Kyocera also improved the high-density packaging process and optimized the design, permitting development of an LED printhead for high-speed, high-resolution printing.

Features

1. High-resolution printing at the world's highest speed

Use of the new high-intensity LED chip realizes the world's fastest electrophotographic printing at 180m/min with a resolution of 1200dpi.

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2. High-reliability printing with low power consumption

The new printhead produces four times more light than its predecessors, even though the unit consumes only one quarter of the power of conventional printers operating at the same speed. The low power consumption also enables a reduction in heat generation at the LED head; increased heat lowers optical precision and significantly affects the stability of the light amount and emission lifespan. The new product is therefore expected to contribute greatly to quality improvement in digital printers, which have been advancing to higher speeds and resolutions.

3. Stability of printing quality enabled by exclusive technology for light amount correction

Kyocera's exclusive light amount correction technology permits an optimal light amount for the characteristics of the amorphous silicon photoconductive drum, which enables stable printing quality.

About Kyocera

Headquartered in Kyoto, Japan, the 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 comprises more than 200 subsidiaries (April 1st, 2009), are information and communications technologies, products to increase the quality of life, and environmentally friendly products. The technology group is also one of the largest producers of solar energy systems worldwide.

With a workforce of about 60.000 employees, Kyocera posted net sales of approximately €8.68 billion in fiscal year 2008/2009. The products marketed by the company in Europe include laser printers, digital copying systems, microelectronic components, fineceramic products and complete solar systems. The corporation has two independent companies in the Federal Republic of Germany: the Kyocera Fineceramics GmbH in Neuss and Esslingen and the Kyocera Mita Deutschland GmbH in Meerbusch.

The company also takes a lively interest in cultural affairs. The Kyoto Prize, one of the most prominent international awards, is presented each year by the Inamori Foundation, once established by Kyocera founder Dr. Kazuo Inamori, to individuals and groups worldwide for their outstanding human achievement (converted at present €370.000 per prize category).

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