

DemonJet

Prototyping Inkjet Printer for Printed Electronics

This inkjet printer is the first to be specifically developed for printed electronics prototyping. The printer integrates all the required production features: registration, printing, drying and sintering. In addition, the printer is capable of printing up to 10 inks at the same session.

These features enable new process combinations to be explored and new printed products and devices to be designed. All of this while making the process more efficient and precise.

Parallel channels are used to deposit multiple types of ink at high precision. The various production tasks can be performed at any desired stage. The variety of substrates that can be used with the printer include: plastics, glass & ceramics in almost any rigid or flexible form.

Having all the printing components: registration, printing, drying and sintering in the same setup brings the printed electronic applications to a new level of functionality. Such capabilities enable developers to design & rapidly test new printed devices with additional functionality & high precision.

- ✓ **Expand R&D Capabilities**
- ✓ **Higher Precision & Quality**

Specifications are subject to change without notice.

Key Advantages

- All processes completed in one session with a single tool
- Print multiple identical designs (step & repeat)
- Print different design (layouts) at the same printing session
- Single setup for the entire process
- R&D flexibility with “processes mix & match” possibilities
- Large format support
 - Maximum substrate size: 440 x 640 mm (17.3 x 25.2’’)
 - Maximum printing area: 427 x 635 mm (16.8 x 25’')



All pictures shown are for illustration purpose only.

From design to prototype in one session & with one tool

More Prototyping and R&D Flexibility

Prototyping and R&D groups can take advantage of all the integrated production features to “mix & match” processes and variety of inks and thereby innovate more. These groups can incorporate drying or sintering at any chosen stage, as well as print other fluid materials.

Higher Precision

The printer offers high precision printing with lines as narrow as 50 μm . To ensure high performance, the printer incorporates an internal optical registration system which can also be used to visually compare the printed version to the input file without removing the substrate from the printer.

More Printing in One Session

The printer's unique large table, allows for several substrates of the same type to be placed, printed and then tested. Printing can also be done on large substrates.



Finally, conductive digital printing achieves industrial standard
 Design → Prototyping → Mass Production!

until now impossible

- 360° solution: inks, printers & printing strategy
- Width and pitch down to 70 μm
- Signal and Power lines printed in a single session
- Unprecedented throughput

Test the lines

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Silver on FR4 printed sample, sintered in-situ (IR lamp).
 Resistivity as low as 8-10 $\mu\Omega\text{cm}$

Key Features & Specifications

- # of nozzles: 360 x 10 channels
- Print Up to 10 inks per session
- Dryer: IR lamp
- Sintering: IR lamp
- Split screen visual inspection
- Printed size: up to 427 x 635 mm (16.8 x 25")



Specifications

Printing method	Epson Micro Piezo™ TFP print head
Resolution	360 x 360 dpi and up to 2880 x 1440 dpi
Minimum droplet size	3.5pl
# of inks per printing session	Up to 10
# of nozzles	360 x 10 channels
Maximum substrate size	440 x 640 mm (17.3 x 25.2'')
Printed size	up to 427 x 635 mm (16.8 x 25'')
Speed	14 minutes - full plate (1.1 sqm/h 1,705 sq. in./H)
Position accuracy	Maximum: $\pm 5 \mu\text{m}$
	Average: $\pm 2.1 \mu\text{m}$
Repeatability	Standard deviation, 1σ : $\pm 2.1 \mu\text{m}$
Size accuracy	Maximum: $\pm 6 \mu\text{m}$
	Average: $\pm 2.1 \mu\text{m}$
Repeatability	Standard deviation, 1σ : $\pm 2.8 \mu\text{m}$
Supported substrate thickness*	Maximum 3.7 mm / 0.145''
Substrate materials**	PET, ITO, Glass, PI, Other
Dryer	IR lamp
Sintering	IR lamp
Power	<ul style="list-style-type: none"> • 220-240 VAC 50Hz + Ground. Line circuit breaker 16 Amp. (for 220 Volt countries) • 110-120 VAV 60/Hz + ground. Line circuit breaker 20 Amp. (for 110 Volt countries)
Size	180 x 118 x 108 cm (L x H x W) / 70.8 x 46.4 x 42.5''
Weight	450 Kg / 992 Pound

* For larger thicknesses please contact us

** For other substrates please contact us