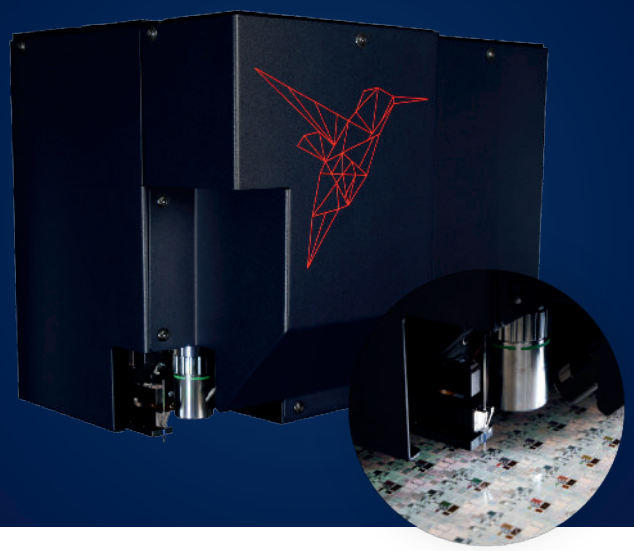
HUMMINK

BIRD

The first industrial HPCaP module for a production fab

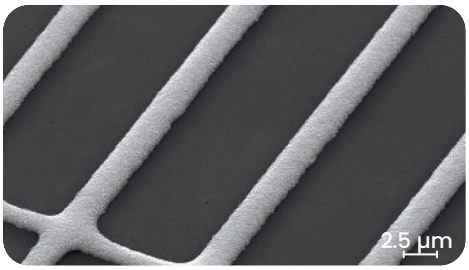
The world's most advanced fountain pen

BIRD is Hummink's industrial printing and repair module, powered by patented HPCaP technology. It brings unique micron-scale precision directly into fab environments, combining seamless tool integration with the reliability and throughput required for production line.



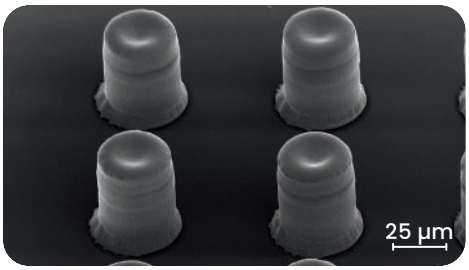
Unmatched Resolution & Precision

Print from 80 down to 0.6 µm, with 500 nm positioning accuracy.



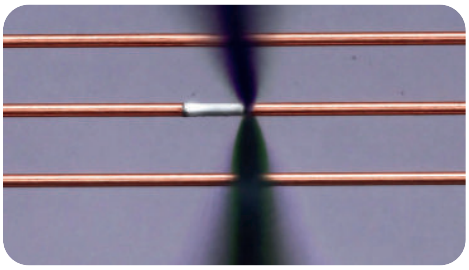
Advanced Design & Integrated Module

Printing module integrated into your OEM machine. Create or import custom patterns — lines, dots, or any shape — for fast, precise printing, including local defect repair.



Print with a Broad Process Window

Print on virtually any substrate with any ink — from conductive materials to polymers and quantum dots, no matter the viscosity (up to 550,000 cP).



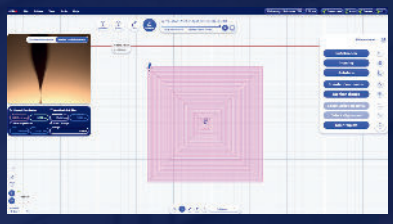
Real-Time Computer Vision & Automation

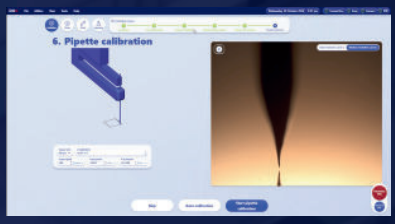
An integrated high-magnification camera powered by computer vision software monitors the process live and automatically adjusts parameters, minimizing manual intervention on the line.

All-in-one intuitive software

A dedicated, internally developed software suite for research and production, built for automation.

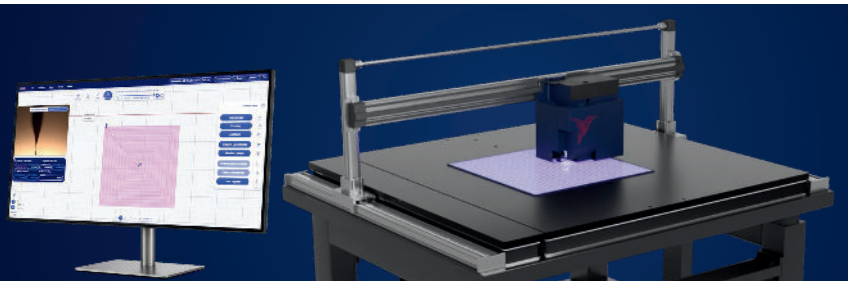
It communicates with your existing software and covers pattern drawing (SVG & DXF, converted to G-code), pipette size adjustment, ink switching, computer vision-based performance monitoring, and AFM-based sample characterization.





www.hummink.com

Technical Specifications



PRINTING	Printing Feature Size	80 - 0.6 µm
	XY Positioning accuracy	500 nm
	Printing Speed	On demand
	Maximum Precision XY Travel Range	On demand
	Substrate Compatibility	Any type, e.g. Panel (up to Gen 8.6), Wafer (up to 300 mm)
	Maximum Z Printing Range	On demand
	Dual Camera System	Medium resolution for live view and high resolution for alignment
	Imaging Resolution	On demand
	Software Interface	On demand
INKS & CAPILLARIES	Viscosity Range (at 25 °C)	1 - 550,000 cP (SR: 0.1 s^{-1})
	Capillaries	Borosilicate or Quartz
	Capillary Diameter	300 nm - 50 µm
UTILITIES	Dimensions (H x W x D)	411 x 296 x 465 mm
	Power	110 V - 240 V
	Weight	< 50 kg

About Hummink

Hummink is the exclusive developer and supplier of High Precision Capillary Printing (HPCaP), a patented technology enabling micron-scale material deposition for advanced electronics manufacturing. From R&D to industrial production, our integrated solution combines printing systems, intelligent software, and proprietary inks.

Already adopted by leading industrial and research organizations across Europe, Asia, and the US, HPCaP enables next-generation manufacturing and repair applications in displays, semiconductors, and advanced packaging. Learn more at www.hummink.com or follow us on LinkedIn.

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