

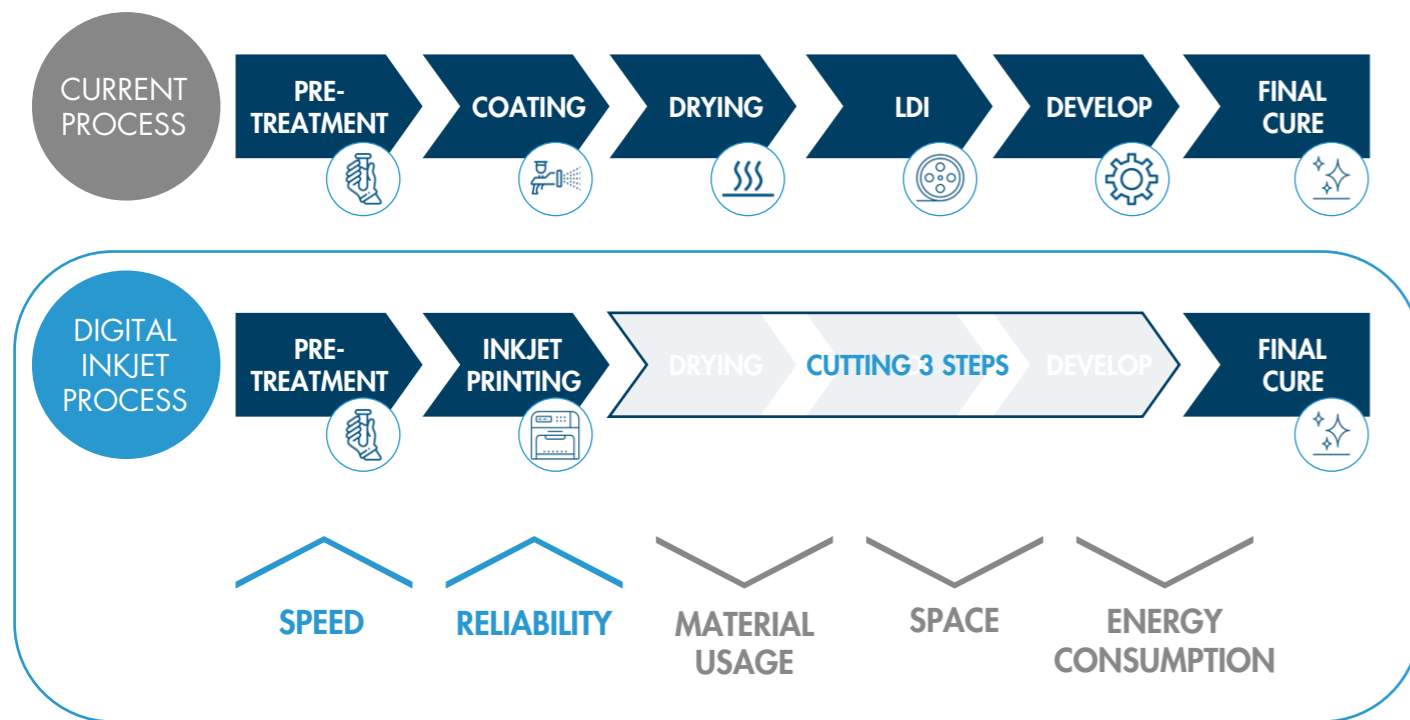
n.jet soldermask



WE PRINT SOLDERMASKS WITH INKJET

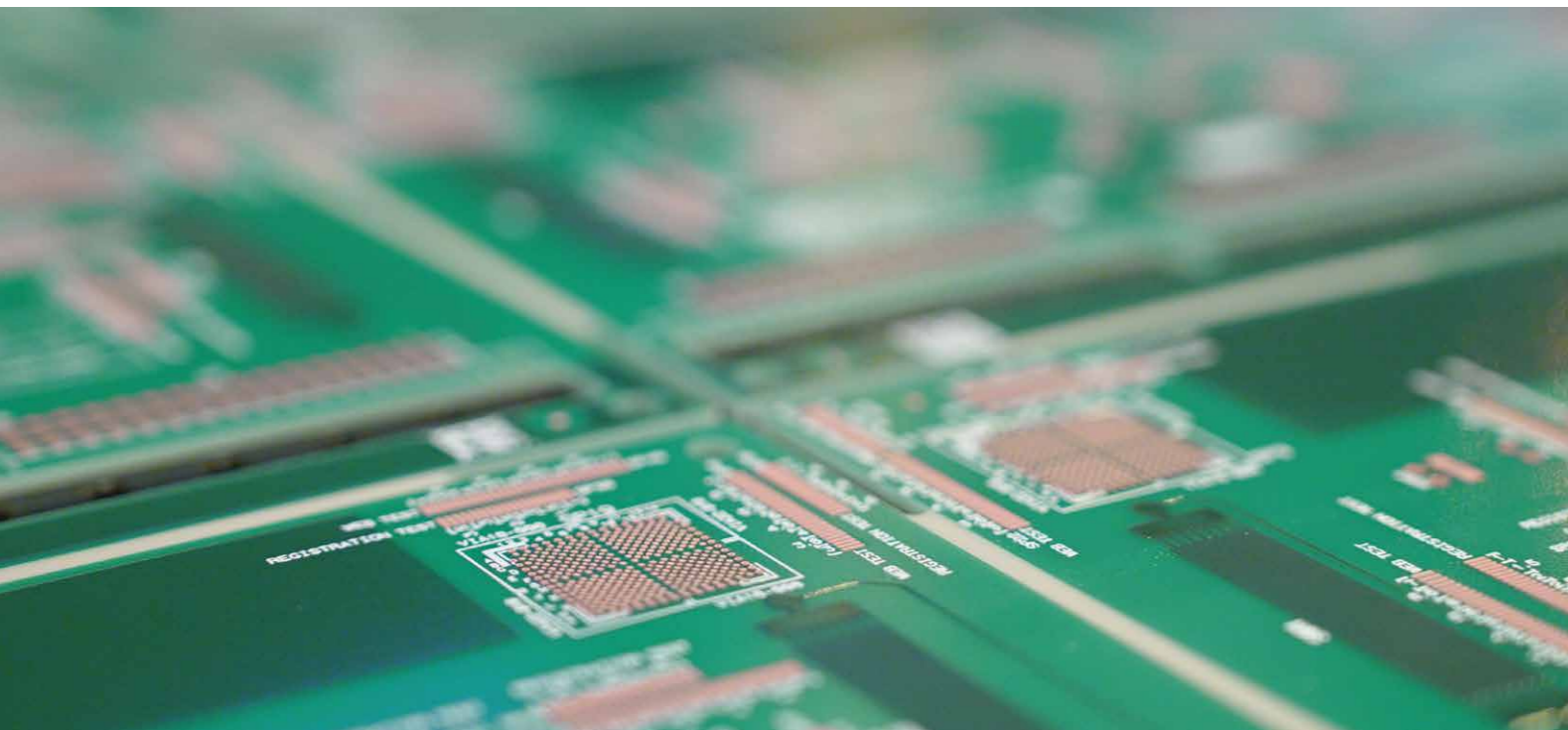
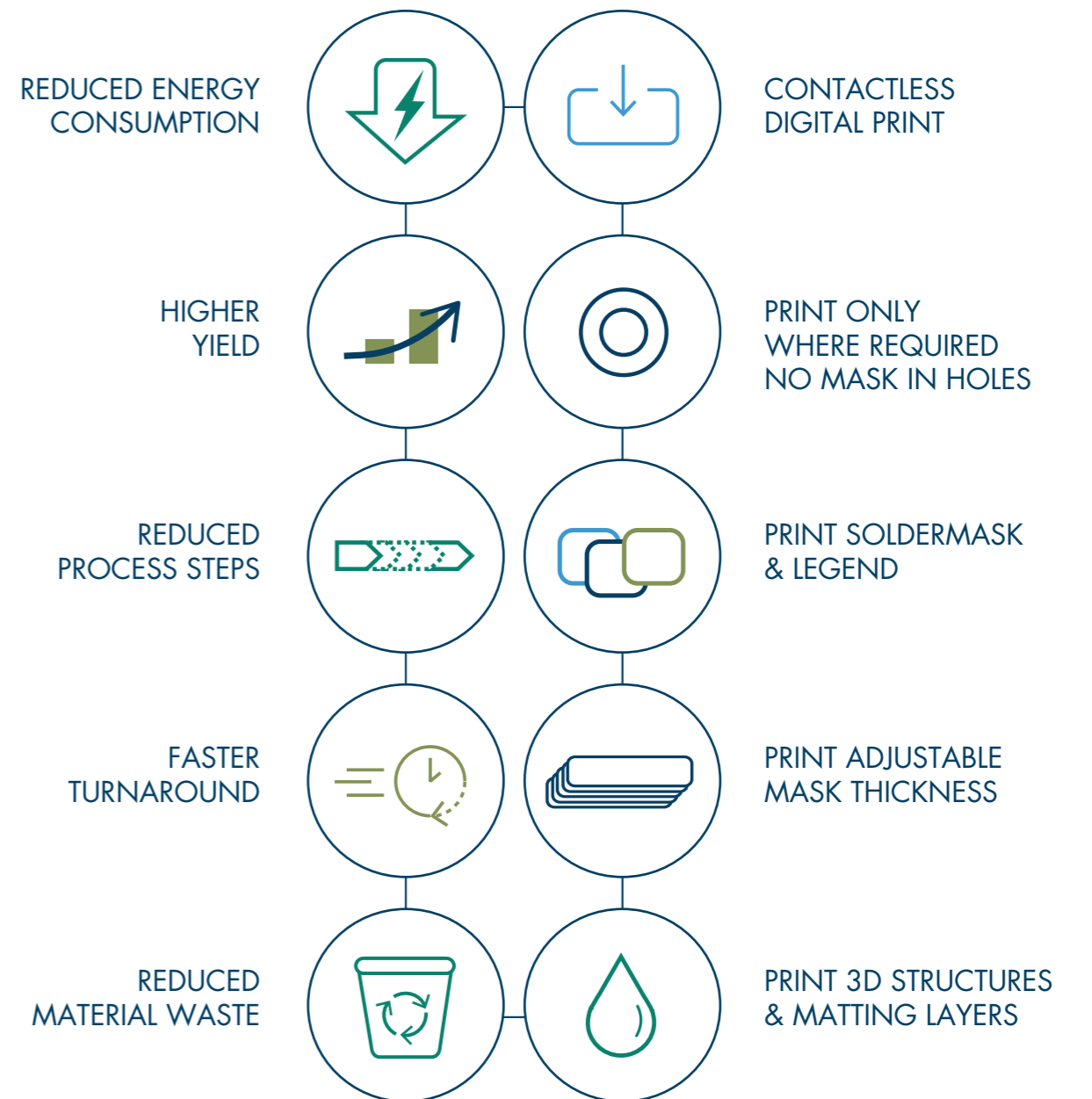
INKJET PRINTING OF SOLDER MASK

Replacing the current subtractive process chains with additive process steps in the production of electronics, has been one of the founding ideas of Notion Systems. It increases production efficiency and reduces waste. On top of this, the n.jet electronics series increase process stability and enables new features not found in today's electronics production. This pushes the limits of current production technology for rigid and flexible circuitry on most substrate material.



ADVANTAGES OF INKJET PRINTING

Notion Systems has developed a system called n.jet soldermask that is able to print solder mask fully digital. The technology saves multiple process steps, large investments in valuable space, energy and labor. It also uses UV-curable inks instead of solvent-based inks, which has far-reaching effects on our environment.



MAIN FEATURES

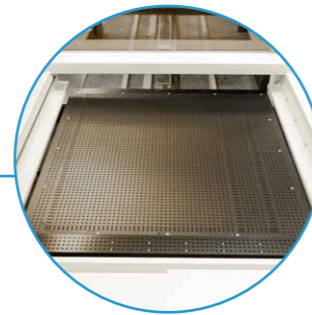
- Digital printing of solder mask & legend
- Manual or fully automated load / unload
- Use of industrial available printheads
- Patented vacuum stage without mechanical clamps
- Integrated non-contact cleaning system
- Highest precision and reliability
- Self maintenance
- Easy to operate
- Automated nozzle calibration
- Optical alignment & calibration
- Fully integrated UV curing system



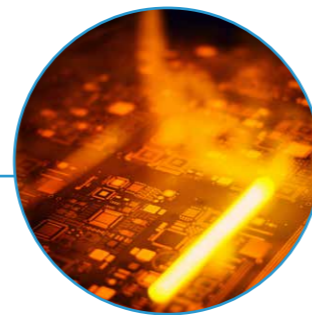
Industrial printhead



Non-contact cleaning system



Stage



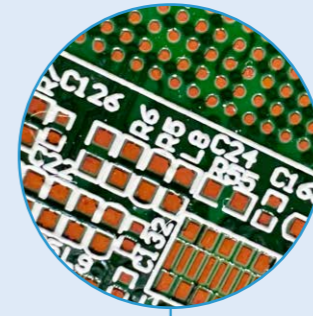
UV curing



HARDWARE OPTIONS



Up to 9 soldermask printheads



Up to 2 legend printheads



External refill station



Automation

SOFTWARE OPTIONS



• Serialization codes
• 2D Matrix codes



CAM station



Legendsm printing with solder mask ink



MES integration

AUTOMATION (OPTIONAL)

The entire soldermask cluster can be fully automated from pretreatment to inkjet printing and final cure. The fully automated set up helps to improve efficiency, consistency, quality, and cost savings, making it an important component of modern PCB manufacturing. The n.jet soldermask can be connected with any Manufacturing Execution System (MES) to streamline and manage the entire manufacturing process.



The n.jet soldermask system can be directly connected to the pre-treatment line and handles the board with special designed vacuum grippers softly through the entire printing process.

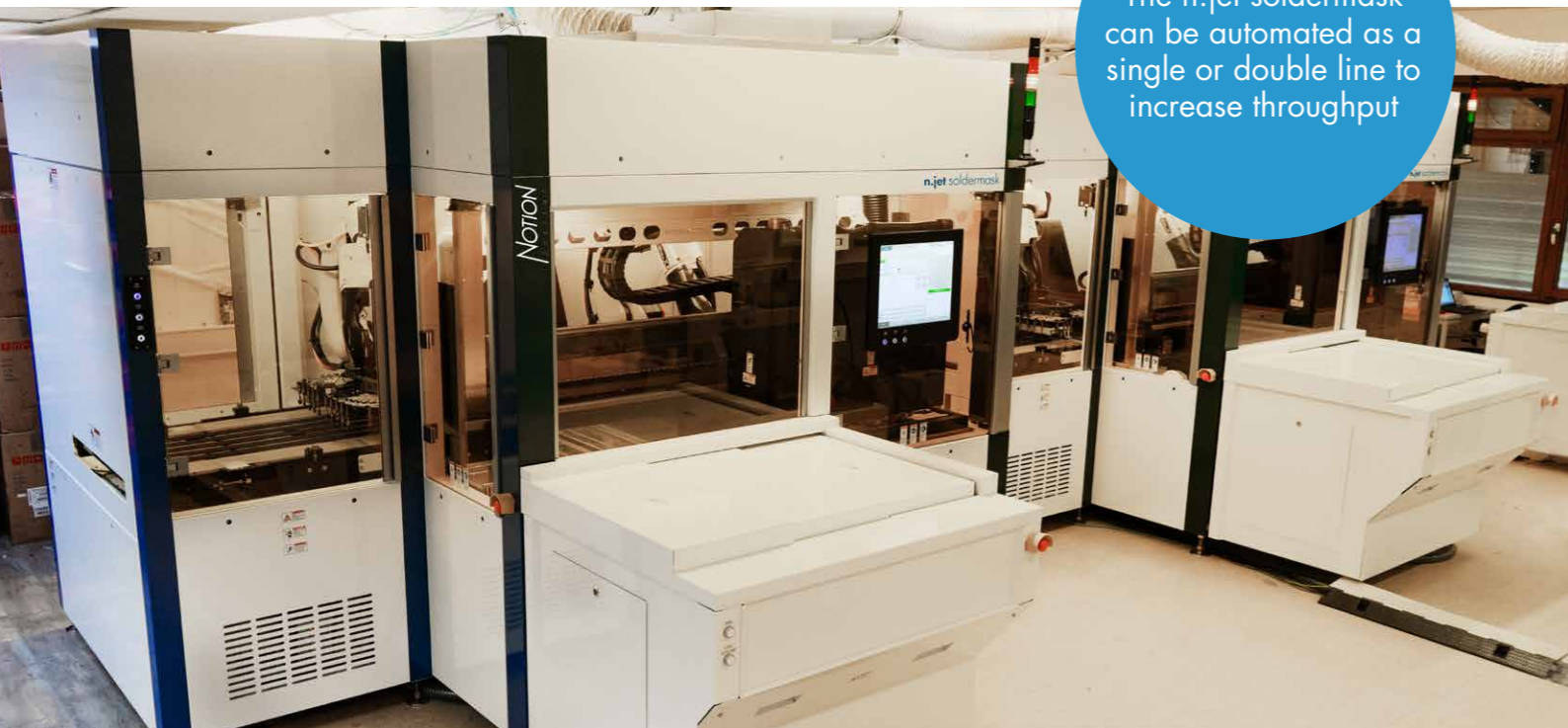


The gripper can be adjusted to different substrate sizes

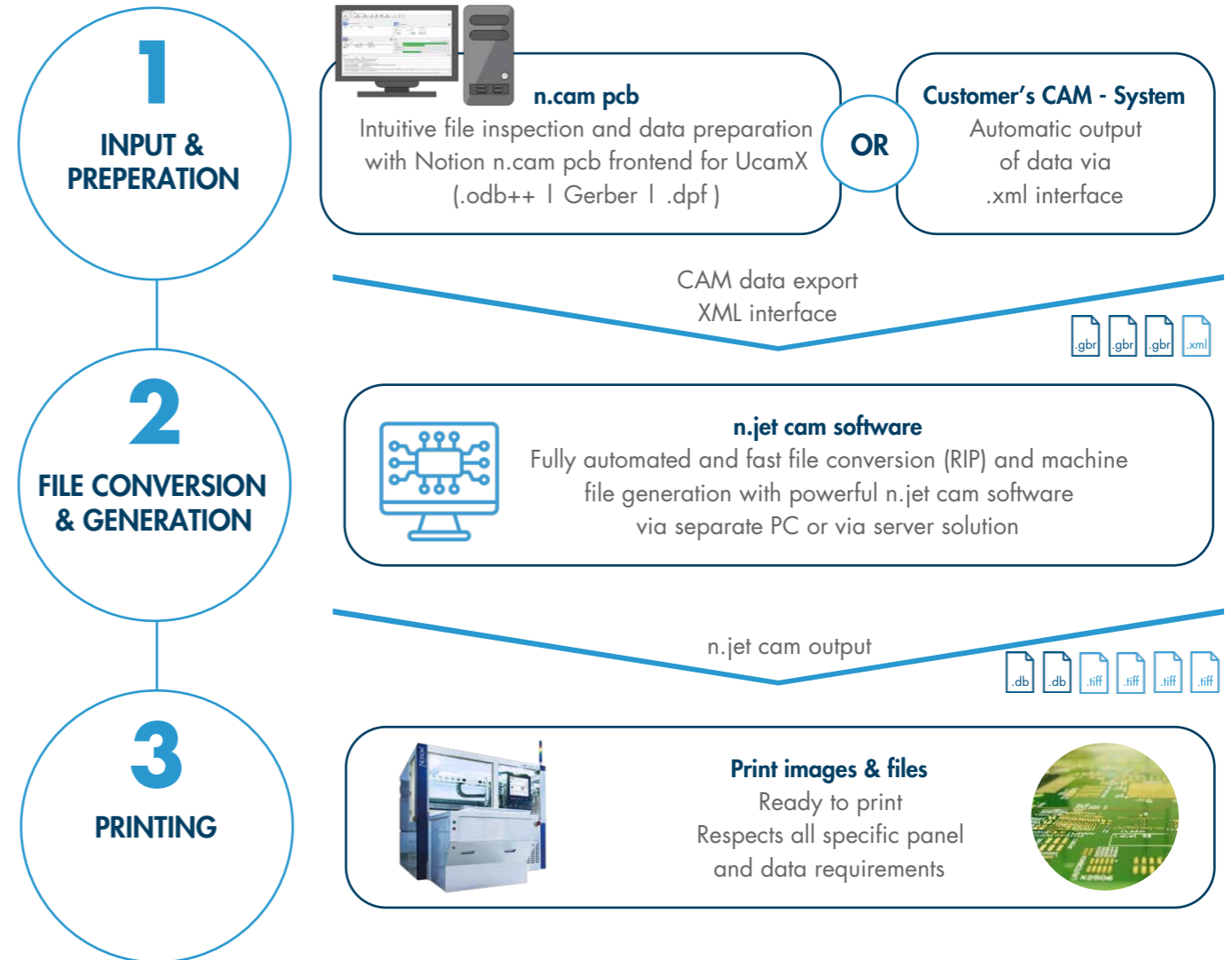


The 2D code reader scans the code on the pcb and enables the automatic loading of the correct printing program.

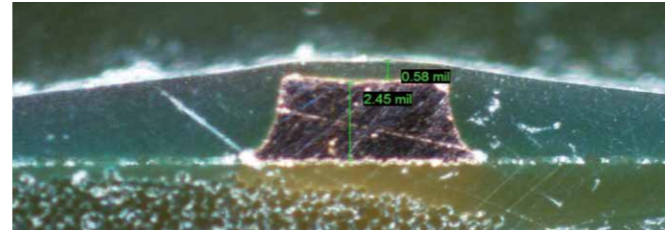
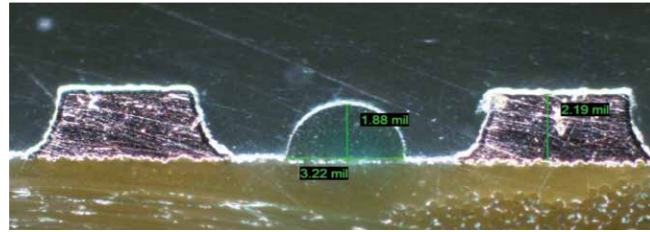
The n.jet soldermask can be automated as a single or double line to increase throughput



DATA PREPERATION

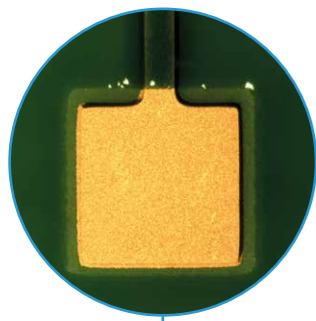


SOLDER MASK PROCESS IMAGES

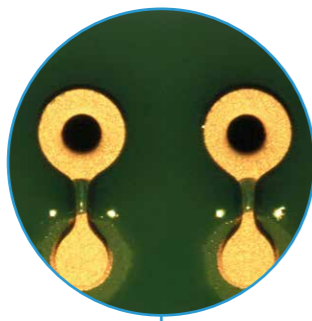


Minimum achievable dam size is 2 mil (50 microns)

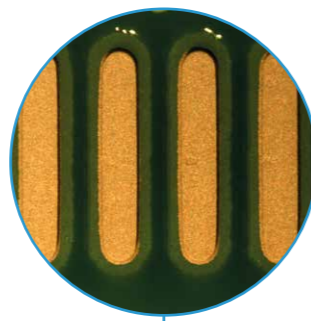
Edge coverage of traces can be adjusted. For high copper thickness, only trace edges need additional ink



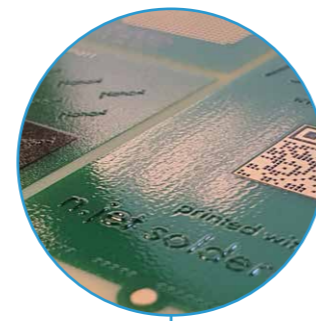
Clear interface area between base material, edge and copper



- Solder mask edge printing
- No bleeding



- Superior edge definition
- High uniformity



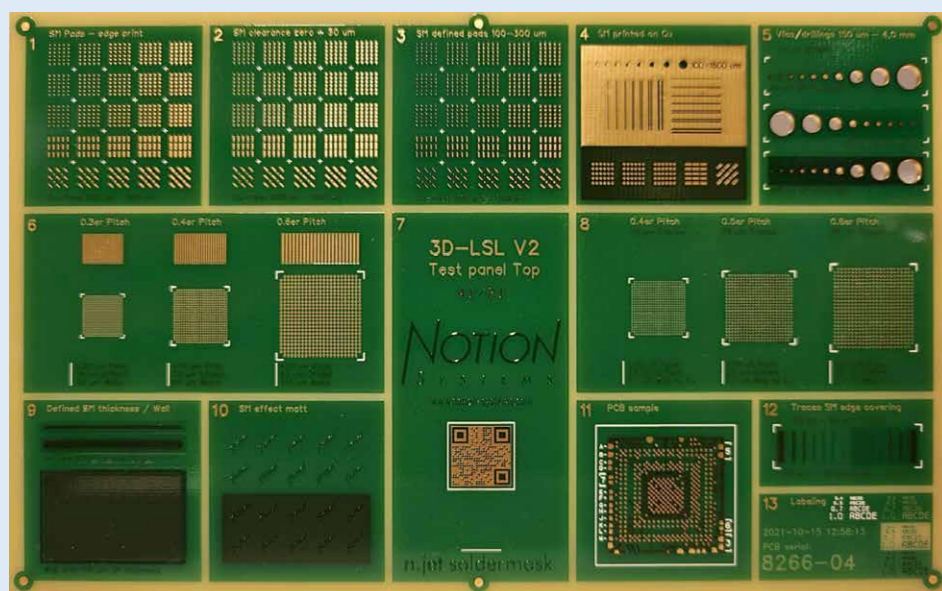
Matt & glossy effects

INKS - UV BASED WITHOUT SOLVENT

The n.jet soldermask applies UV based inks. This has several advantages over traditional solvent based inks:

- UV ink cures quickly when exposed to light
- Very clean process
- UV based process improves accuracy
- Environmentally friendly

COMMERCIALY AVAILABLE INKS



NOTION SAMPLE BOARD

Fully finished ENIG board

Available for different soldermask inks

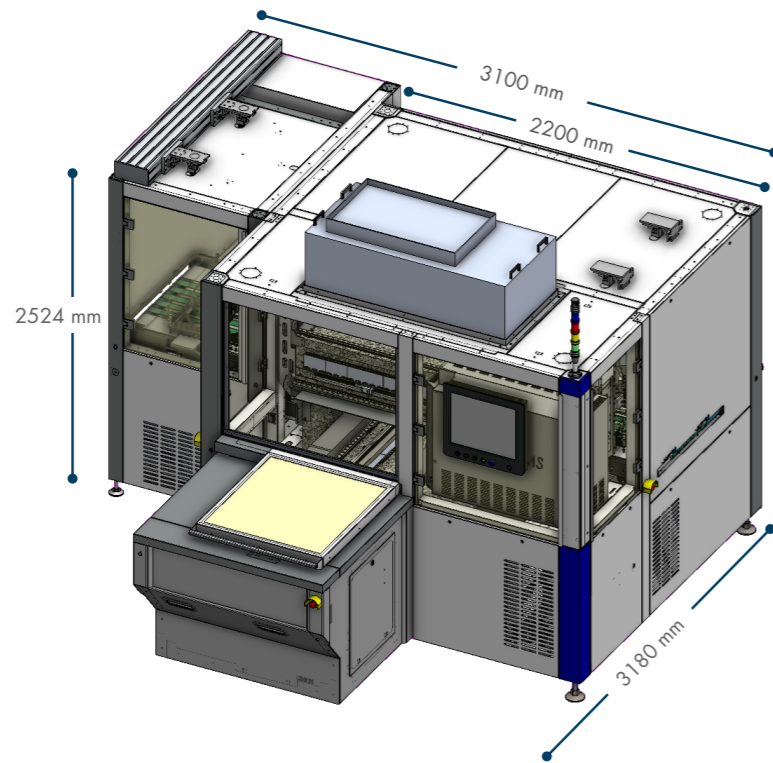
For validation tests such as:

- Adhesion test
- Cross sections
- Scratch tests
- Microscopic views



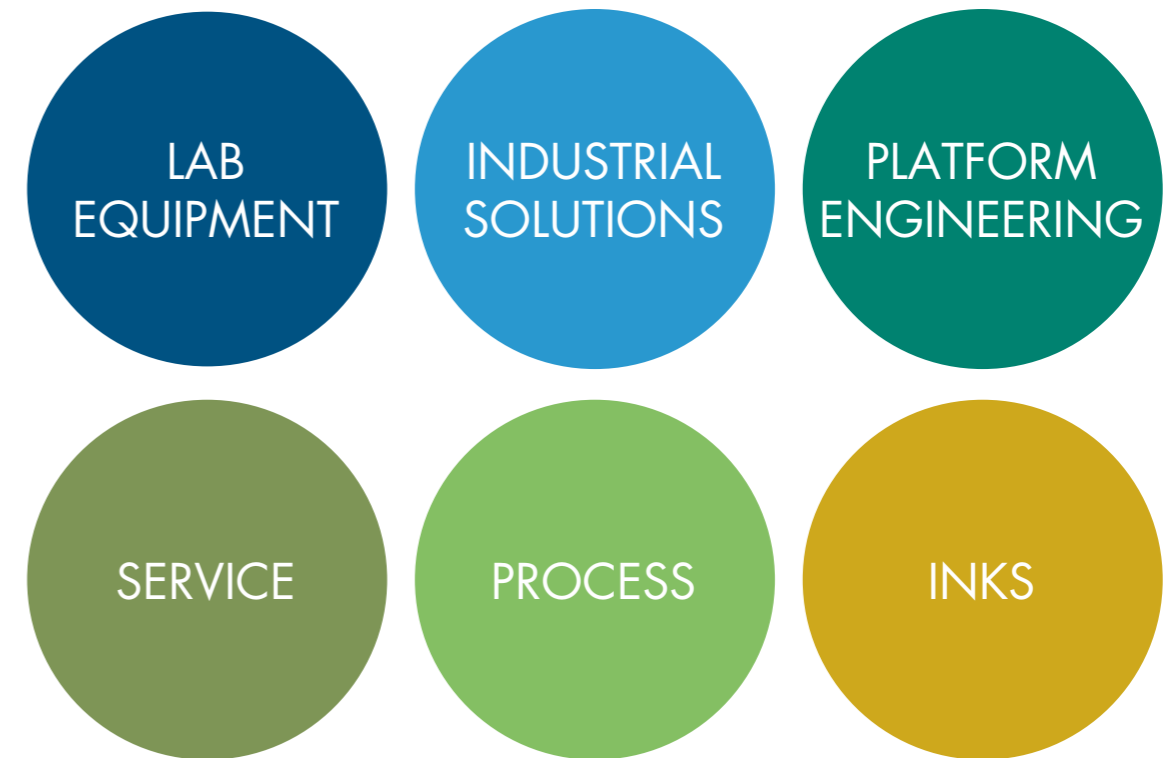
DIMENSIONS & SPECIFICATIONS

Machine dimensions (WxDxH):	3100mm (2200mm) x 3180mm x 2524mm (122" (86") x 125" x 99")
Machine weight:	4000 kg (8818 lbs) - incl. automation 3500 kg (7720 lbs) - base machine
Max. panel size:	610 x 610mm ² (24"x24") (larger on request)
Number of printheads:	Up to 9 printheads for soldermask printing Up to 2 printheads for legend printing
Printing time per side:	Depends on copper thickness, typically 30 pcb/h (Please consult for individual cycle time calculation)
Optical alignment:	4 fiducials / panel or subpanel
Load/unload:	Manual (standard)
Automatic load/unload:	Yes, optional (can be retrofitted after machine installation)
Facility connections:	400V, 32A, 3P, N, PE & CDA 6,5 - 8 bar
Energy consumption:	5 kWh - incl. automation 2kWh - base machine



ONE STOP SOLUTION PROVIDER

With decades of experience, we bring precise inkjet systems to our customers and cover all steps for scaling digital inkjet printing processes from the lab to industrial production.



NOTION

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THE FUTURE OF ADDITIVE MANUFACTURING

