



Orbotech Sprint™ Series Inkjet Printers

Best-in-Class Inkjet for PCB Legend



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Powered by KLA's DotStream Pro™ technology, Orbotech Sprint 200 and Orbotech Sprint 150 deliver cost-effective, top quality industrial inkjet printing for consistently accurate production of even the most advanced legend designs to meet any manufacturing volume need.

Benefits

High Quality Printing with DotStream Pro Technology

- Customized print heads for high performance and long life
- Advanced LED-based UV for perfect on-the-fly ink drop pinning
- Optimized visual quality of fine text and filled areas
- Self-maintenance and print quality preservation

High Volume Production with Top Quality and Accuracy

- High production quality even at basic resolution*
- Uniform printing on challenging surfaces and thick copper traces
- Unparalleled fine features sharpness and readability
- Alignment, scaling and table rotation mechanisms for accurate positioning

Cost-Effective, Field-Proven Industrial Inkjet Printing

- Leading 24/7 proven technology for fast and consistent top quality printing
- More cost and time savings compared to conventional operational techniques
- Low operation costs with long-life components
- Extensive functions for product traceability and quality control

Easy, Flexible, Eco-friendly Operation

- Intuitive user interface and automated data transfer from CAM
- Printing on rigid, rigid-flex and flex PCB using approved inks
- Manual or fully automated operation
- Advanced recycling and one-pass* print ensuring best efficiency without ink waste

* at 720 dpi (printed with one-pass mode by Orbotech Sprint 200 and two-pass mode with Orbotech Sprint 150)

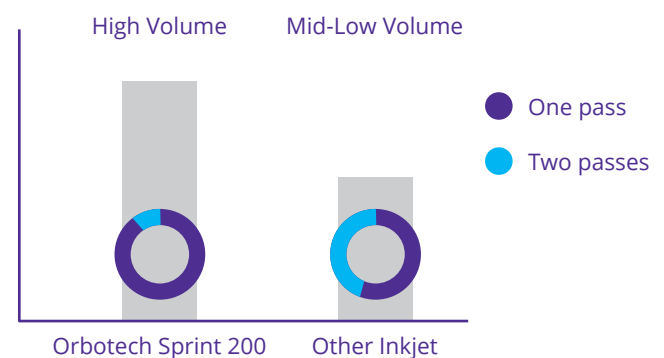


PREVIOUS: 0.7 & 0.6 mm text before DotStream Pro technology one pass, 26 sec**



NEW: 0.7 & 0.6 mm text with DotStream Pro technology one pass, 15 sec** (Orbotech Sprint 200)

** Net printing time, 24" x 18" panel



Orbotech Sprint 200 delivers superior print quality and output in one pass compared to other inkjet printing solutions popular in the market. While Orbotech Sprint 200 achieves a solid 80%-90% production in one pass, other inkjet printing systems typically reach between 50% and 60%.

Orbotech Sprint series systems are powered by KLA's DotStream Pro technology, which delivers consistent top print quality at high throughput. Orbotech Sprint 200 achieves nearly full ink coverage in a single pass with precise drop placement and optimized algorithms for fine text and filled areas. These systems contain LED-based UV curing (multi-LED in the case of Orbotech Sprint 200) and specially optimized print heads that meet the challenges of electronics industry substrates and processes. Patented technologies for self-maintenance and ink cycle control reduce costs by significantly extending print head life. The built-in air scrubber ensures a consistently clean printing environment.

Improved Production with High Quality and Accuracy

With KLA's innovative approach to print head and ink cycle control, Orbotech Sprint printers deliver the best combination of print quality, accuracy and speed - even on challenging surfaces. Fine text, even below 0.5mm^{***}, can now be printed with the industry's fastest ever print head response. An intelligent image analyzer RIP optimizes pixel distribution and identifies the best path for the print head according to legend pattern. High depth of focus (DOF) of 1.5mm, advanced alignment and scaling features for each panel ensure optimal registration accuracy.

Cost-Effective, Field-Proven Industrial Inkjet Printing

Orbotech Sprint 200 and Orbotech Sprint 150 enrich KLA's field-proven bestselling line of inkjet printers, with hundreds of systems in production. No more compromising between print quality, throughput and operating costs.

Orbotech Sprint series systems deliver all the benefits of digital printing while reducing costs and improving yield. A large set of multiple serialization and barcoding options, combined with intelligent print optimization tools, make these superior solutions suitable for even the most demanding product traceability needs.

Easy, Flexible and Eco-Friendly Operation

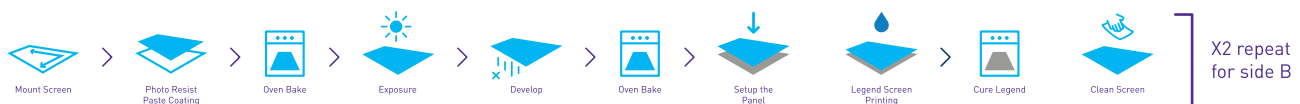
Orbotech Sprint series systems are easy to operate with minimal training, thanks to automated data transfer from CAM and its intuitive user interface. Fully integrated hardware, including vacuum table, clamps and panel flattening mechanisms, ensures top quality results on warped panels and a variety of thicknesses. KLA's leading cooperation with top inkjet ink producers, combined with a unique system design, ensures high printing performance on rigid, rigid-flex and flex PCBs. Advanced recycling and superior one-pass printing deliver the best ink usage efficiency without waste for more eco-friendly manufacturing.

*** Requires special printing modes and well-controlled solder mask surface tension.

Printing Process Flow

Analog Printing Flow

Screen printing: long, limited and not eco-friendly (legacy, cumbersome process)



Digital Printing Flow with Orbotech Sprint

Orbotech Sprint inkjet printing: faster, accurate and cost-effective



Specifications

	Orbotech Sprint 200	Orbotech Sprint 150
Production Volume	Mass-High	Mid-QTA
Throughput*	Normal resolution	Up to 95 prints/hour
	Higher resolution	Up to 67 prints/hour
Maximum Panel and Image	30.9" x 24.4" (785mm x 620mm)	
Minimum/Maximum Panel Thickness	4 - 295mils (0.1-7.5mm)	
Minimum/Maximum Resolution	720 - 1440dpi	
Minimum Line**	3mil (75µm)	
Minimum Text Height***	20mil (0.5mm)	
Registration Accuracy	±1.4mil (±35µm)	
Depth of Focus	60 mil (1.5mm)	
Alignment	User selectable up to 4 points, CCD camera, manual or automatic	
Print Mode	Side A-A or side A-B	
Print Head	Minimum dot size - 70µm; minimum drop volume - 13pl	
Number of Print Heads	2	1
Number of Nozzles	2,048	1,024
Software	Software RIP, Windows, Gerber RS-274X input, Push to Print, multi-language	
Ink	Multiple inks from leading suppliers	
	Standards & Certifications: UL 94V-0, MIL-55110, MIL-31032, ASTM E 595, IPC-650, IPC-4781, AA-56032D Type II, RoHS, REACH, Halogen-free	
Automation Compatible****	Yes	
Dimensions W x D x H	63.8" x 72.8" x 63" (1,620mm x 1,850mm x 1,600mm)	
Weight	3,307lbs (1,500Kg)	

Note: in case of legend printing with more than 50% PCB area coverage, Orbotech Sprint 200 requires at least two print passes and four print passes with Orbotech Sprint 150.

* 24" x 18" panel size with 1" margin; Normal resolution is printed with one-pass mode with Orbotech Sprint 200 and two-pass mode with Orbotech Sprint 150. Higher resolution is printed with two and four passes respectively.

** Lines of 75µm require special printing modes and well controlled solder mask surface tension.

*** Recommended to use two-pass mode or more.

**** Automation is supplied by selected third-part.

The above specifications are subject to change without notification.

Orbotech Sprint inkjet printers are class-1 laser products. Laser specifications: IEC 60825-1 compliant.

KLA SUPPORT

Maintaining system productivity is an integral part of KLA's yield optimization solution. Efforts in this area include system maintenance, global supply chain management, cost reduction and obsolescence mitigation, system relocation, performance and productivity enhancements, and certified tool resale.

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Rev 3.0_5-06-2022