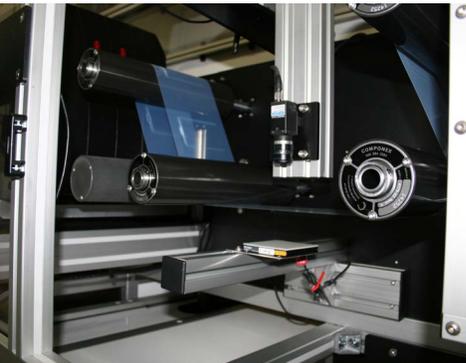
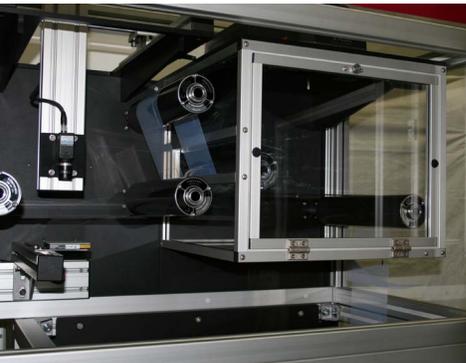




# Profection Series

A Flexible, Modular Additive Printing, Inspection and Characterization System



**PRECISE. FLEXIBLE. COMPACT.** The Profection Series allows manufacturers of printed electronics to use additive processes and roll-to-roll technology to deliver the precision handling necessary for sensitive and flexible materials. The modular design of the system allows for different process technologies to be utilized with minimal changes to the tooling frame. These systems are well suited for lab and production environments where flexibility and variety of product codes are desired.

**Module options include:**

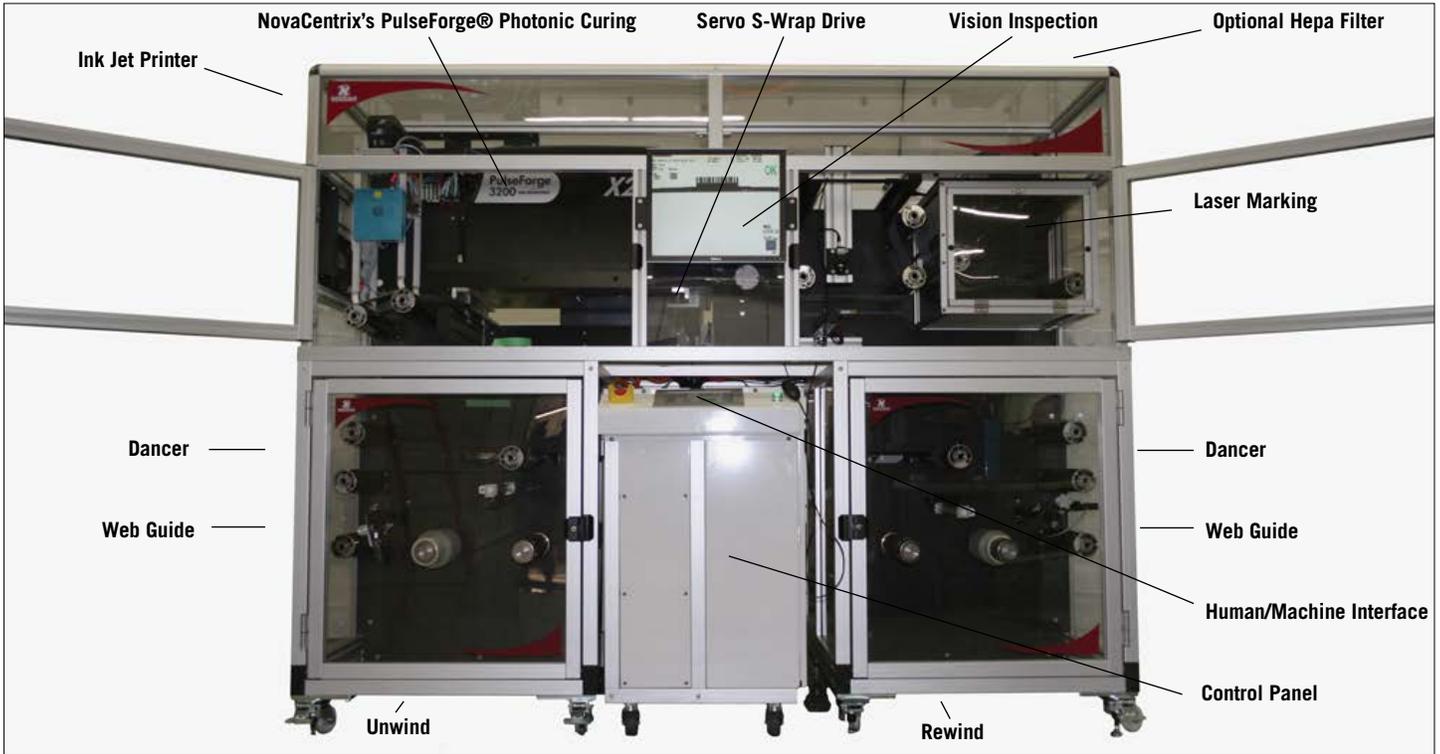
- Ink jet printing
- Photonic curing
- Laser processing
- Electrical testing
- Vision inspection
- Lamination
- Slitting
- Rotary die cutting
- Step and repeat die cutting
- Screen printing
- Product characterization

**INDUSTRY-LEADING EQUIPMENT. UNSURPASSED KNOWLEDGE.** Northfield Automation Systems knows the importance of considering a manufacturing effort from front to back, and of fully understanding the end goals before a single piece of equipment is identified. The Profection Series features Northfield Automation's motion control and vision inspection tools along with the process line integration.

**Motion Control** — As a pioneer in the roll-to-roll automation of flexible printed circuits decades ago, Northfield Automation Systems is at the forefront of developing specifications for new and novel raw materials and its low-inertia roller technology has become an industry standard.

**Vision Inspection** — Northfield Automation Systems creates world-class visual inspection systems that offer the optimal balance of fine-level defect resolution with a rapid roll-to-roll process. NAS vision inspection equipment uses high-end commercial lenses and lighting, and custom software to resolve images.





**Small Footprint** — In addition to its modular design, the Protection Series offers value as a turnkey solution with a much smaller footprint than systems utilizing subtractive processes. The in-line system is enclosed within a HEPA clean environment that allows for operator safety and cleanroom level processing without incurring added costs to prepare a facility level cleanroom.

**M-Solv Limited Inkjet Printing** — M-Solv Limited is an industry leader in developing innovative and advanced processes and technology for microelectronic and photovoltaic applications. M-Solv's inkjet printing module employs drop on demand (PZT), continuous inkjet, spray valve and micro pump actuated technologies.

**NovaCentrix's PulseForge® Photonic Curing** — NovaCentrix's PulseForge® photonic curing module not only allows for a dramatic increase in the processing speed, but it also enables the creation of new materials not possible with thermal processing.

**Bosch Engineering** — Bosch Engineering provides the Human Machine Interface (HMI) for the system, and servo drives allowing for precision motion control.