A large industrial roll-to-roll coating machine with multiple rollers and a complex metal frame, set in a factory environment.

ROLL-TO-ROLL COATING TECHNOLOGY

FOR FLEXIBLE ELECTRONICS AND OPTICAL MULTILAYERS

EMERGING MARKETS DRIVEN BY FORM FACTOR

Applied Materials focus on high-throughput low-cost manufacturing by enabling advanced Roll-to-Roll (R2R) processes, while meeting the diverse demands of the industry - shape, size, weight, unbreakability etc.

Multi-touch sensor solutions are shifting to double-side roll-to-roll coating on sensitive polymeric substrates

Truly flexible, bendable, foldable and rollable displays are emerging

High-uniformity, complex multilayer optical coating for color-sensitive decorative films

High-quality energy saving window films for the future nearly zero-energy buildings (NZEBs) and electric vehicles (EV).

Batteries, Internet of Things (IoT), Wearables, e-Textiles etc driving demand in innovative flexible electronic applications.

Addressed Markets/End Products



Flexible Display



Foldable Smartphone



Wearables

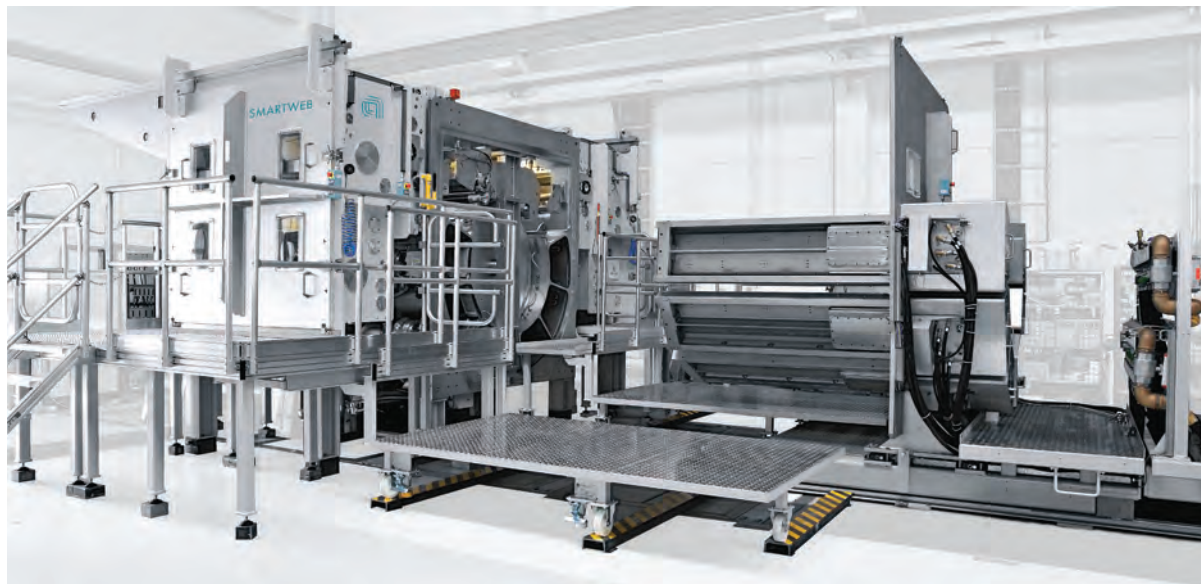


Energy Solutions



SMARTWEB™ ROLL-TO-ROLL SPUTTER SYSTEM

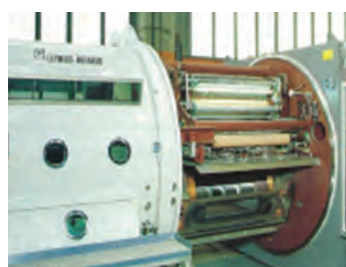
The benchmark system for flexible electronics, touch panels and optical multilayers



- Modular platform architecture expandable to two or three process modules for a wide range of applications.
- Highest productivity and lowest cost of ownership using proprietary dual rotatable magnetron technology.
- Sputtering complex layer stacks in a single pass with AC and DC cathodes housed in individually controlled compartments.
- High yield with superior winding architecture and active cleaning that ensure minimized defects.
- Wrinkle-free double-side coating on temperature-sensitive substrates by effective heat transfer from film to drum.
- Substrate-specific adhesion improvement and optimization with advanced pretreatment options.
- Consistent product quality using proprietary in-situ process monitoring and control (vacuum, optical, electrical etc).

APPLIED FLEX ELECTRONICS AND OPTICAL COATING SOLUTIONS

1980s	2004	2010	2014	2018
<p>“A” Type Sputter Tool 2 m film width Up to 6 targets per drum Versatile applications</p>	<p>SmartWeb™ Lab 400 mm film width Up to 3 targets per drum Flex Electronics R&D</p>	<p>SmartWeb™ XL 1400 mm film width Up to 12 targets per drum Display, PV, Flex Electronic</p>	<p>SmartWeb™ WF 1800 mm film width Up to 12 targets per drum Window Films</p>	<p>SmartWeb™ SL 800 mm film width Up to 6 targets per drum R&D and Pilot Production</p>



“A” Type Sputter Tool



SmartWeb™ Lab



SmartWeb™ WF



SmartWeb™ SL

SmartWeb™ SL



For R&D and Pilot Production

Compact, modular roll-to-roll sputter system designed for 800 mm maximum film width, with 3 separated cathode compartments to house dual rotary or planar targets. Versatile system for the deposition of innovative layers (metals, metal oxides/TCO, dielectrics etc) for applied research and low-volume production.

SmartWeb™ XL



For High Volume Production of Display, PV

Modular roll-to-roll sputter system designed for 1400 mm maximum film width, with 6 separated cathode compartments to house single or dual rotary or planar targets. Field-proven industry standard system for high-quality ITO touch films.

SmartWeb™ WF



For High Volume Production of Window Films

Modular roll-to-roll sputter system designed for 1800 mm maximum film width, with 6 separated cathode compartments to house single or dual rotary / planar targets. Optimized for the deposition of complex optical multi-layer stacks like low-e coating for car windows.

<http://www.appliedmaterials.com/roll-to-roll-web-coating> | email: web_sales@amat.com

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