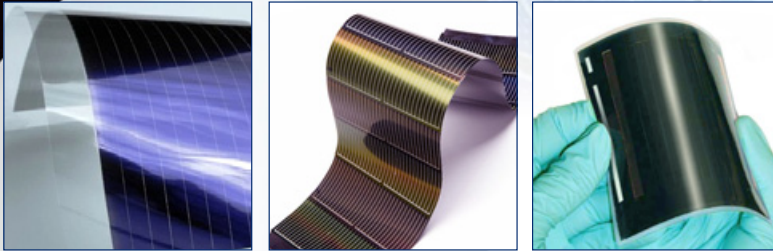


PROGRAMMABLE COATER FOR solar cell

MANUFACTURING

ULTRASONIC COATING SYSTEM



Fully enclosed XYZ tabletop ultrasonic spraying system designed for depositing solutions, suspensions, and nanosuspensions. Applications include TCO, dopants, and anti-reflective coatings as well as various thin film coatings including CIS, amorphous silicon and quantum dots.

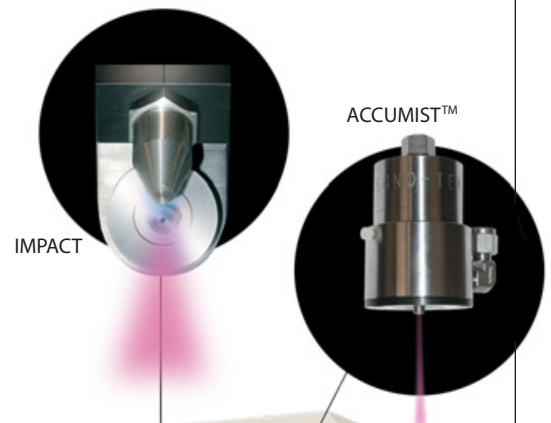
Ideal for R&D or low-volume production, the ExactaCoat SC is easily configured with Sono-Tek ultrasonic nozzles to customize spray patterns for your specific application. Spray patterns range from 0.08 - 2" wide (2 - 50 mm).

The ExactaCoat SC features:

- Precise substrate uniformity with repeatability down to $\pm 2\%$
- Compact benchtop design that favors portability
- 400 mm x 400 mm x 100 mm (15.75" x 15.75" x 3.94") range of motion
- Pathmaster® Windows®-based programming software with image import
- Remote trackball teach pendant
- Coordinated motion in all three axes simultaneously
- Front panel LCD screen with function keys

Sono-Tek ultrasonic nozzles feature:

- Highly homogenous coatings resulting in greater cell efficiency
- Up to 80% reduction in material consumption
- Non-clogging design results in minimal servicing and downtime
- Repeatable spray patterns that are easily shaped for precise coating applications
- Highly controllable spray produces consistent results with or without masking
- Corrosion-resistant titanium and stainless steel construction
- No moving parts to wear out



Optional Equipment:

Heat Plate, Vacuum Plate, or Combined Heat/Vacuum Plate

Ultrasonic Dispersion Pump - for keeping suspensions evenly dispersed during coating process

MicroFlow Recirculation Pump - for precise dispense of suspensions at very low flow rates

Camera - Passive Vision

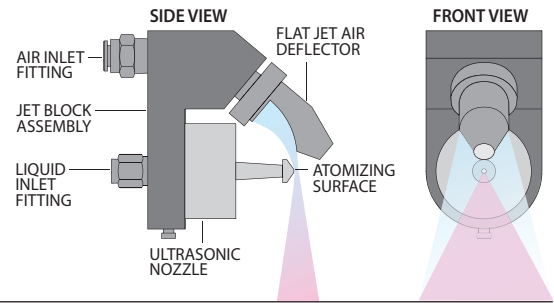
PC - Full programming software and unlimited recipe storage

Laser Pointer



Operating Principle

The Impact System combines Sono-Tek's unique ultrasonic atomizing nozzle with a controlled jet of air from the flat jet air deflector. The ultrasonically produced spray at the atomizing surface is immediately entrained in the air stream, creating a fan-shaped spray pattern (10 - 50mm). The velocity of the air stream is controllable, allowing low or high-impact of the atomized spray onto the product or substrate.

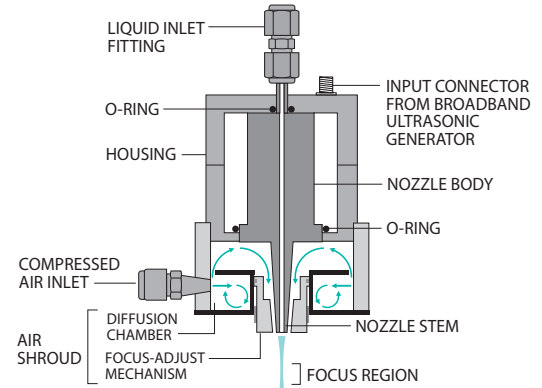


The Accu-Mist™ system combines Sono-Tek's unique Microspray ultrasonic atomizing nozzle with low pressure air to produce a soft, highly focused beam of small spray drops.

Compressed air, typically at 1 psi, is introduced into the diffusion chamber of the air shroud, which produces a uniformly distributed flow of air around the nozzle stem.

The ultrasonically produced spray at the tip of the stem is immediately entrained in the low pressure air stream. An adjustable focusing mechanism on the air shroud allows complete control of spray width (2mm - 10mm).

The spray envelope is bow-shaped. The width of the bow is controlled by moving the focus-adjust mechanism in and out.



Sono-Tek Laboratory Services

Sono-Tek's in-house laboratory services offer the expertise of our engineering and technical staff in resolving process issues and tailoring our technology to meet the needs of our customers.



EXACTACOAT SC PROGRAMMABLE SYSTEM SPECIFICATIONS

Enclosure Specifications

Work Area*	400 x 400 x 100 mm (15.75 x 15.75 x 3.94 in)
*NOTE: Coating area may be reduced depending on nozzle configuration	
Repeatability	0.025 mm (0.001 in)
Resolution	0.015 mm (0.0006 in)
Motor	Brushless DC servo
Drive Mechanism	Ball screw drive
Work Payload	11.4 kg (25 lbs.)
Inputs/Outputs	52
Software	Pathmaster® Windows-based
Power	120V, 220V, +/- 10%, 50-60Hz
Air	80 PSI dry unlubricated air
Certification	CE certified
Options	Heat plate temp Up to 150°C Vacuum plate 4 zones, user controlled Camera (Passive Vision) Adjustable viewing area Laser Pointer

Dimensions 37.2" W x 31.2" H x 32.7" D

