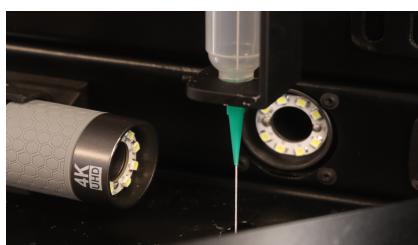


Yarn Coating & Curing Machine

Advancing E-textile Research



The Yarn Coating & Curing System is a compact inline platform enabling precise and continuous ink coating for the creation of functional yarns.

A nozzle-based coating head ensures controlled multilayer deposition and ensures high ink efficiency. Compatible with any ink suitable for screen-printing.

Features an inline integrated curing module to streamline production.

The modular design allows for quick and simple change of functionality. For example, the thermal curing module can be easily swapped for a UV curing module enabling yarn coating with UV curable inks.

Technical Specifications

Dimensions * (W x H x D)	Weight (kg)	Single-Phase Power Requirements	Current Rating (A)	Vented Extraction	Air Supply	Environment
600 x 1300 x 600 mm 23.6 x 51.18 x 23.6 inch	~100	200 – 240 V AC, 50 Hz 100 – 127 V AC, 60 Hz	13 (240 V) 15 (110 V)	Required	No	15°C to 28°C RH 20 – 70%

Drive System

Motor	Step Angle	Max Speed
Bipolar stepper + encoder	1.8° with micro-stepping	300 RPM

Heating System

Heater Type	Heating Zones	Max Temp Accuracy	Temp. Control
Quartz halogen, tungsten	2**	300°C ±0.2%	Front panel or USB

Imaging System

Camera	Light	Status
Dual 4K cameras	Adjust. light	3-stack signal tower

Coating Capabilities

Yarn Types	Monofilament and multifilament
Nozzle Diameters	95 µm to 1600 µm
Ink Viscosity Range	≥ 1000 mPa·s
Yarn Tension Range	0.3 – 2.3 N
Maximum Yarn Travel Speed	31 cm/s (with a 20 mm yarn spool)
Ink Efficiency	0.34 g per 10 m of yarn (see application page)

Link to demo [video](#):



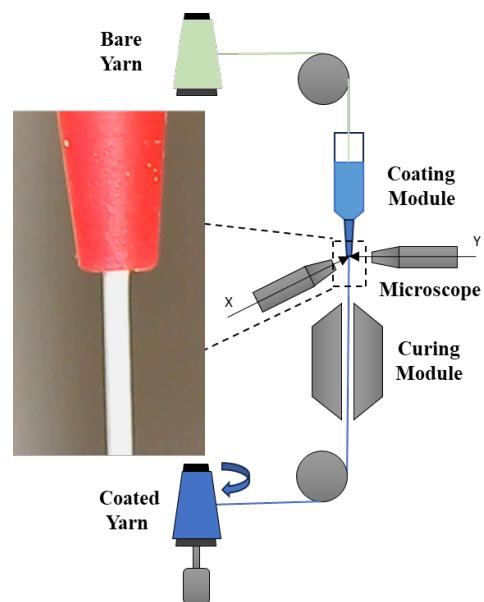
*Additional configurations available as benchtop and floor-standing (see Configurations tab)

**Number of heating zones can change depending on size (see Configurations tab)

Features

- ✓ **Modular Design** – Custom arrangement for functionality expansion
 - UV Curing module
 - Yarn Winding module (*coming soon*)
- ✓ **Integrated Curing** – Inline IR/UV curing for streamlined coating
- ✓ **Compact** – Small and configurable footprint to fit any lab space
- ✓ **Speed Control** – Adjustable coating speed for versatile applications
- ✓ **Wide Ink Compatibility** – Any ink with viscosity above 1000 mPa·s
- ✓ **Coating Thickness Control** – Via interchangeable nozzles, yarn speed and ink rheology.

Operating Principle



Configurations

	Standard	Benchtop	Floor-standing
Height (H)	1300 mm / 51.2 inch	902 mm / 35.5 inch	1970 mm / 77.6 inch
Heating Zones	2	1	Up to 5
Temperature profile	Yes	No	Yes
Co-axial coating in a single run	No	No	Yes
Max yarn speed*	3.5 m/min	1.75 m/min	8.75 m/min
Graphical illustration			

*For a thermally cured dielectric ink, coating thickness 30 μm .