FOM moduloR2R

The FOM moduloR2R is a highly capable, modular roll-to-roll pilot line platform. The base model consists of unwind, rewind, oven, and slot die stations for simple pilot-scale thin film production. This can be easily customized and optimized for a given coating process by adding various machine modules and process stations. The FOM moduloR2R makes designing the perfect production line for a particular process simple, representing an ideal first step from R&D to full-scale production.

KEY FEATURES

- Roll-to-roll slot die coater
- Continuous, non-contact coating process
- Coating with µm precision
- Uniform dry film thickness from nm to µm
- Adjustable slot-die head contact angle
- Double and single ovens
- Automated coating via intuitive GUI
- Remote access from PC or Tablet
- Local and cloud coating protocol saving

- Modular design for optimized process
- Designed for flexible substrates
- Two directional wind and unwind capability
- Full web, tension via servo-controlled system
- Convenient and easy roller replacement
- Excellent layer uniformity, and repeatability
- Alignment of multiple layers
- Remote support and troubleshooting

Technical specifications

FOM TECHNOLOGIES

MACHINE (FOM MODULOR2R 300)

- Model: FOM moduloR2R 300
- Dimensions: 800–1600 mm x 1290 mm x 1800 mm (L x W x H) per module
- Weight: 300-800 kg per module
- Substrate roller width: Max 350 mm
- Substrate width: Max 350 mm
- Integrated PLC control system
- Intuitive HMI touch panel interface
- Fully motorized x-y-z positioning (1 µm precision)

COATING (FOM MODULOR2R 300)

- Coating width: up to 300 mm
- Substrate roll diameter: max 700 mm
- Coating speed range: up to 20 m min^{-1}
- Slot-die compatibility: FOM SD 25 - FOM SD 300

OVEN (300 & 500)

FOM flotation oven:
- Max. web width: 550 mm
- Drying length: 1000 mm
- Max. temperature: 200°C
- Airflow capacity: up to 900 m³/h
- Temperature control: PT100-based
- Options: Integrated IR drying

Optima oven:
- Maximum curing area width: 350 mm or 550 mm web and 9 m web throughout the oven
- Substrate compatibility: Flexible
- Max. temperature: 200 °C
- Heating element: Hot air ring heater
- Heat transfer options: Convection (when air is supplied)
- Single side coating
- Operated with under pressure and control extraction
- Option for Optima oven: IR curing lamps (1000W) only for 300 version

MACHINE (FOM MODULOR2R 500)

- Model: FOM moduloR2R 500
- Dimensions: 800–1600 mm x Approx. 1500 mm x 2000 mm (L x W x H) per module
- Weight: 300-800 kg per module
- Substrate roller width: Max 550 mm
- Substrate width: Max 550 mm
- Integrated PLC control system
- Intuitive HMI touch panel interface
- Fully motorized x-y-z positioning (1 µm precision)

COATING (FOM MODULOR2R 500)

- Coating width: 1 mm to 500 mm
- Substrate roll diameter: max 700 mm
- Coating speed range: up to 20 m min^{-1}
- Slot-die compatibility: FOM SD 25 - FOM SD 500

CERTIFICATIONS & STANDARDS (300 & 500)

- Machine standard: EN 60204-1 and ISO 13849-1 (CE)
- 2006 / 42 / EC Annex II B

MACHINE UTILITIES (300 & 500)

Electrical power supply
- 3-phase Voltage: 3 X 400V + N + PE (V)
- Voltage frequency: 50 & 60 (Hz)
- Maximum Current: 63 (A)

Ventilation/compressed air
- Compressed air information: Spec list 5-7 bar. Clean and dry, non-lubricated. ISO 8573-1:2010 Class 1.2.3 or better
- Connection and tubing type: To be fitted to Ø8 mm Festo push-fit connection

Internet Connection
- Ethernet cable via Rj45 connector

OPTIONS

Equipment:
- FOM ionizing bar (Anti-static)
- FOM Blade coating system
- FOM Flexographic module
- FOM slot-die height laser system
- FOM slot-die height & alignment laser system
- Calendering module Lamination system
- Bar code and text ink jet printer
- Corona treatment
- Non-contact surface cleaner
- 300 ink jet printing module

Additional drying:
- FOM air knife system
- FOM IR system

Pumps, syringes, and consumables:
- Syringe heating: Up to 80 °C
- Slot-die head heating: Up to 80 °C
- High viscosity pump
- Slot-die shims and guides for adjusting coating width and pattern-integrated syringe reversible pump
- Stainless steel syringe
- Glass syringe
- PPTT syringe