

# ▶ cast film lines

**SML**  
EXTRUSION LINES – ENGINEERED TO PERFORM ▶

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▶ **MACHINE DIRECTION ORIENTED  
FILM (MDO)**

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**Extrusion lines –  
engineered to perform**

# MDO units for excellent film properties

The monoaxial stretching process in SML's cast film lines offers a wide range of options to improve product quality. The interaction of sophisticated engineering and precise machine control makes it possible to adjust the visual appearance, enhance tenacity, increase barrier properties while the film thickness is being reduced.

## Key Features

- Vast variety of different film properties
- Motorised adjustable stretching gap
- Safe & easy service-friendly design
- Wide application range of the MDO
- Stiffer film with a good flatness for printing applications

## FILM PROPERTIES



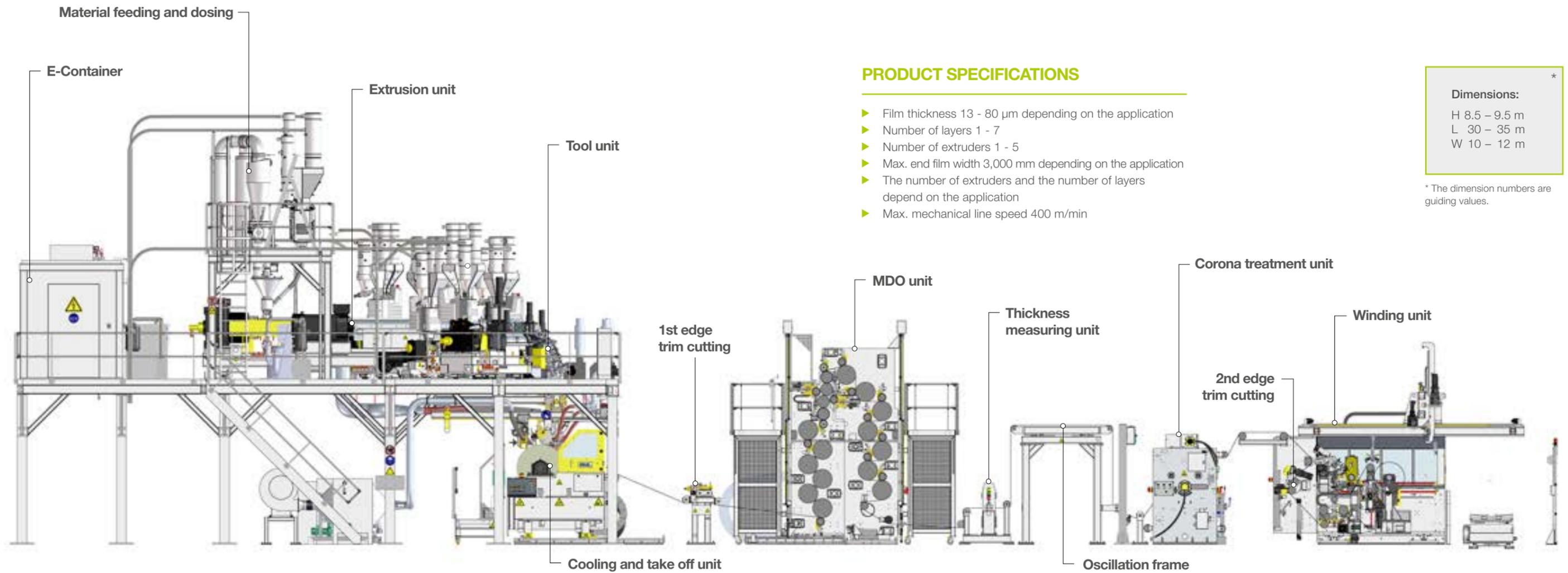
### Increase of:

- ▶ Film strength
- ▶ Film stiffness
- ▶ Puncture resistance
- ▶ Linear tear properties
- ▶ Gloss
- ▶ Dead fold properties
- ▶ Barrier properties against water and oxygen
- ▶ Breathability



### Decrease of:

- ▶ Film thickness
- ▶ Elongation in machine direction
- ▶ Machine directed tear strength
- ▶ Dart drop
- ▶ Transparency
- ▶ Haze



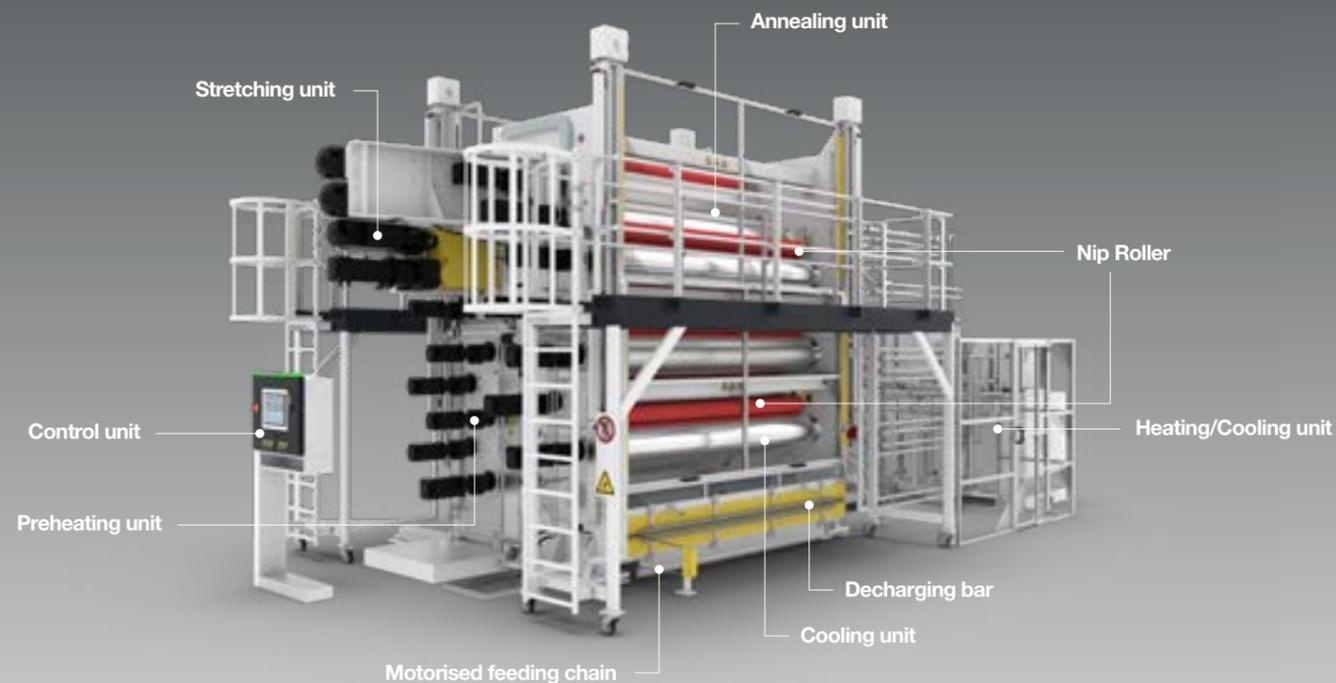
**PRODUCT SPECIFICATIONS**

- ▶ Film thickness 13 - 80 µm depending on the application
- ▶ Number of layers 1 - 7
- ▶ Number of extruders 1 - 5
- ▶ Max. end film width 3,000 mm depending on the application
- ▶ The number of extruders and the number of layers depend on the application
- ▶ Max. mechanical line speed 400 m/min

**Dimensions:**  
 H 8.5 – 9.5 m  
 L 30 – 35 m  
 W 10 – 12 m

\* The dimension numbers are guiding values.

**MACHINE DIRECTION ORIENTATION (MDO) UNIT**



**EXTRUSION UNIT**

- ▶ Material drying unit for MOPET film production
- ▶ Gravimetric dosing system
- ▶ Extruder diameter 60 – 150 mm
- ▶ Hydraulic filter
- ▶ Fixed geometry or variable geometry feedblock
- ▶ Automatic single manifold die
- ▶ Die splitting system
- ▶ Dual chamber vacuum box
- ▶ Main extruder with vertical scraptruder for refeeding of edge trims
- ▶ Refeeding of all edge trims to the inline recycling unit and refeeding of the recycling material to the main extruder

**CHILL ROLL UNIT**

- ▶ Primary cooling roll Ø 1,000 mm
- ▶ Secondary cooling roll Ø 400 mm
- ▶ Tertiary cooling roll Ø 400 mm, depending on application
- ▶ Three roll cleaning system
- ▶ Airknife
- ▶ Whole unit vertical and horizontal adjustable
- ▶ Cut-resistant and high grip guiding rolls

**DOWNSTREAM EQUIPMENT**

- ▶ Thickness measuring system Beta- or IR- or X-ray sensor
- ▶ Corona treatment unit single side, single side reversable or double side
- ▶ Post cooling roll after the corona treatment
- ▶ Oscillation frame or winder oscillation depending on the winder
- ▶ Film inspection system

**WINDING UNIT**

- ▶ Turret winder for the production of mother rolls
- ▶ Horizontal sliding winder for the production of inline slitted rolls and mother rolls on 3-inch and 6-inch winding shafts
- ▶ Different cross-cutting units available depending on the film

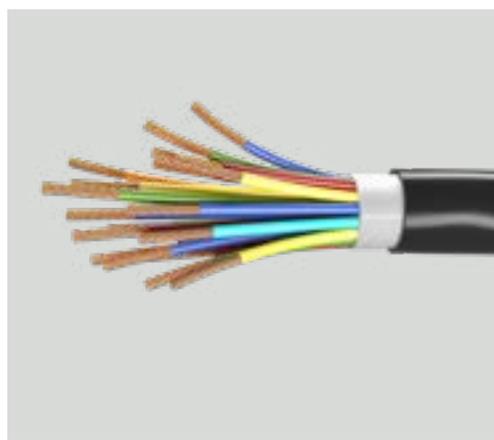
**STRETCHING UNIT MDO**

- ▶ Edge trim cutting before the stretching unit
- ▶ Pre-heating station with up to 6 rolls
- ▶ Stretching station with 2 rolls and nip rolls
- ▶ Annealing station with up to 6 rolls
- ▶ Cooling roll
- ▶ Automatic film treating unit in the MDO unit
- ▶ Each roll individually driven
- ▶ Each roll individually temperature controlled
- ▶ Discrete PLC control unit for the MDO unit



### The premier league in mono-oriented film

SML's cast film lines are employed for the production of many different applications such as carrier handles, stand-up pouches and adhesive tapes. Good flatness facilitates printing applications. In addition, technical requests, such as cable insulation can be realised.



▶ **Take advantage  
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extrusion  
technology.**

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