

# SPACELINE II

The best gets better again!



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## The best gets better again

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With a market share of more than 65 %, SINGULUS TECHNOLOGIES is offering its latest version of the replication line SPACELINE II: this system is capable of producing all Single and Dual Layer DVD (9, 5, 10) formats.

Based on the experience of 1400 systems in the market, the SPACELINE II offers a process cycle time faster than 2.3 sec.

The SPACELINE II achieves the most cost-efficient disc production and highest product quality and yield available in the market, making it the new industry benchmark for DVD.

The SPACELINE II is delivered with two MOLDPRO/2 molding machines.

With the MOLDPRO/2 all-electric molding machine the SPACELINE II provides the smallest footprint worldwide. Other qualified molding machines may be integrated on request.

The SPACELINE II, with many patented original parts (SMART CATHODE®, TMD, Spin Cooler, etc.), ensures a high daily production rate for DVD.

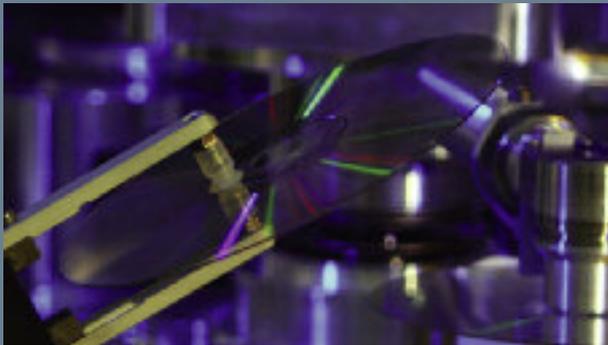
With its worldwide sales and service network, SINGULUS TECHNOLOGIES is able to provide exceptional support together with technological synergies to benefit our customers.

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# Concept



## Concept

- \_ Dedicated to produce DVD 5, DVD 9 and DVD 10
- \_ Production cycle times
  - 2.30 seconds for DVD 5 and DVD 9
  - 2.50 seconds for DVD 10
- \_ Confirms to either CE or UL industrial standards
- \_ Modular, highly integrated design incl. all production steps from molding, spin-cooling, metallizing, bonding, UV curing to quality inspection

- \_ Minimum space required
- \_ Transmission Measurement Device (TMD) for closed loop control of both metallized disc halves
- \_ High productivity and high uptime
- \_ Clear structured disc flow, avoiding mismatch between discs halves
- \_ Automated handling of DVD through all production steps

- \_ Excellent maintenance and service accessibility
- \_ Highly reliable
- \_ DVD handling by mechanical 3-finger grippers via center hole of disc
- \_ Transportable to the production site with fork lift truck

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# Main Components

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## 1 Injection Molding

The MOLDPRO/2 all-electric molding machine is designed for the economic production of CDs and DVDs. Its direct drive concept guarantees highest precision and repeatability to ensure disc quality according to the specifications issued by the Philips Intellectual Property & Standards Organization. The MOLDPRO/2 molding machine is equipped with its own computer control unit and is fully integrated into SPACELINE II and interfaced with PLC.

Other qualified DVD molding machines can also be integrated upon request.

## 2 Spin Cooler Unit

Provides fast and homogenous temperature reduction on the discs. Allows handling and managing of the disc halves without deviation and birefringence impact.

## 3 Input Conveyor

An adjustable clean airflow device results in best pre-process conditions for every single substrate.

## 4 SINGULUS V Metallizer with TMD Sputter Layer Measurement

With more than 6000 units, the latest Singulus metallizer has proven its reliability and efficiency with our major customers. Both metalizers in the SPACELINE II are equipped with SMART CATHODES®, allowing the use of a large range of sputter materials. By implementing a closed-loop system between the metalizer and the Thickness Measurement Device (TMD), SINGULUS has exceeded requirements for layer uniformity while also extending target lifetime as compared to other systems on the market.

## 5 Bonding Resin Dosing Unit

Separate units for degassing, dosing and recycling are combined with an accurate dosing pump in one small, lightweight device. Accommodates a large range of recommended bonding resins.

## 6 Bonding Station

VI<sup>2</sup>-Bond is installed to prevent air inclusions in the bonded disc at faster bonding times.

## 7 Spinning Station

Dual spin bowls in series for high speed DVD production.

## 8 UV Curing Station

- \_ Adjustable power and curing time
- \_ Low power consumption
- \_ Simultaneous top, bottom and side curing
- \_ Excellent edge curing
- \_ Motor driven tilt compensation

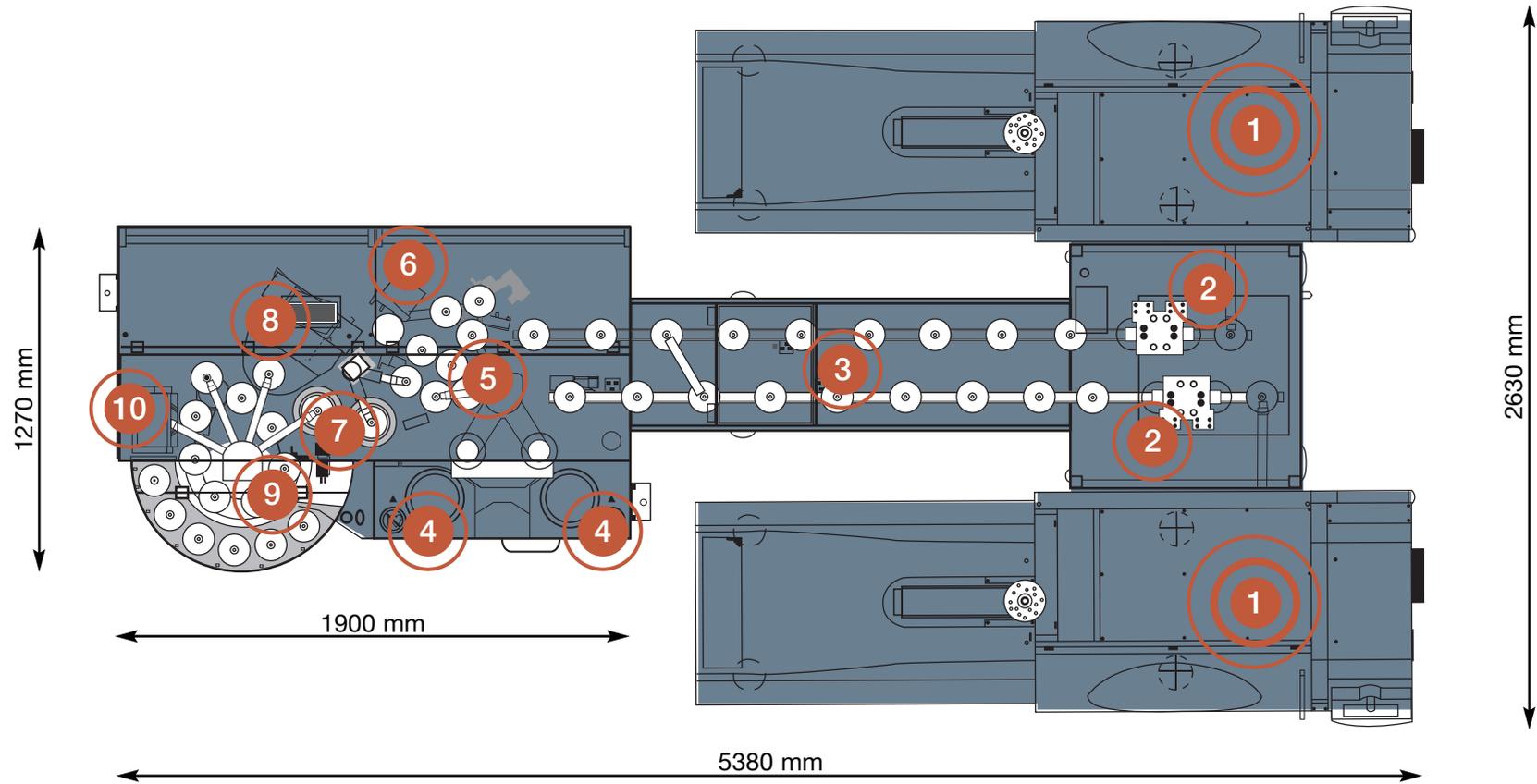
## 9 Final Cooling Conveyor

Eight positions for completed discs, including a blow-off station with exhaust system.

## 10 Scanner

Ready for the latest version of quality inspection units.

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<b>Product</b>	
- DVD:	DVD 5, DVD 9, DVD 10, DVDI <sup>Plus</sup> ®
- Diameter:	120 mm / 80 mm
<b>Metallization</b>	
Fully reflective layer:	Al (approx. 40 nm)
Semi reflective layer:	Ag+ (approx. 9 nm)

	Au (approx. 15 nm)
	Si (approx. 20 nm)
<b>Target Lifetime</b>	
Aluminium:	up to 130,000 shots
Silicon:	up to 200,000 shots
Silver Alloy:	up to 550,000 shots (depending on target manufacturer)

<b>Performance DVD</b>	
Cycle Time:	2.30 s (Ag+) 2.50 s (Si/DVD 10)
Output:	33,000 29,500 (Calculated without stamper change)
<b>Recommended Molding Equipment</b>	
MOLDPRO/2:	MP 60



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