



ImmuCoat[®] Production Line

OPTIMA
EXCELLENCE IN LIFE SCIENCE

Member of



PACKAGING VALLEY

Germany

Globally active, close to the customer

The family enterprise characterized by relentless growth, is now in the hands of the third generation. Still, Optima continues to make it a point to maintain its original flexibility and customer proximity. The company employs a staff of over 1,500 in numerous locations.

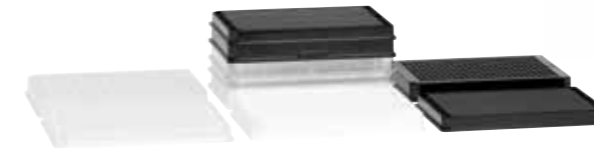
Technologies by Optima are in worldwide demand: The export share of 80 % underlines the high degree of investment within the manufacturing, filling and packaging machinery industry.

Each company sector is an independent and flexible specialist in its own rights. This also applies to Medicon, an Optima subsidiary. Its professional and experienced project management allows implementation of comprehensive turnkey projects – at literally every location in the world, guaranteeing customers competent engineering services, efficient training, and a high degree of customer service.

MEDICON ImmuCoat® Production Line for ELISA Test Kits

Medicon offers fundamental experience in liquid handling and filling processes with specific dosage algorithms. A dedicated team responds to the needs in immunoassay production.

Page 4 – 14



MEDICON ImmuFill For filling of Immunoassay test kit reagents

The monoblock filling and closing machine **ImmuFill** handles all typical containers, liquids and closures.

Page 15



MODULAR AND SCALABLE

Configure your own **ImmuCoat®** Production Line



ImmuCoat® Modules

- » **Base Stations**
- » **Stacking Unit**
- » **Stacking Conveyor**
- » **Pressing Unit**
- » **Single Channel 8 Dosing Unit**
- » **Manifold 8 Dosing Unit**
- » **Manifold 96 Dosing Unit**
- » **Aspiration Unit**
- » **Washing Unit**
- » **Vacuum Unit**
- » **Fill Level Verification**
- » **Electrostatic Discharge**
- » **Printing Unit**
- » **Labeling Unit**
- » **Incubator**
- » **Pouching**

Your benefit with ImmuCoat® Machines

- » **Modularity** Quick change and addition of modules
- » **Scalability** Machine can be extended from an entry level machine to a fully-automated production line
- » **Service** Spare parts, online remote service, scheduled maintenance, upgrades, repairs, process optimization
- » **Quality** Professional production equipment suitable for 24/7 operation
- » **Documentation** Machines delivered with all significant guidelines (CE etc.)

ImmuCoat® Base Stations



6 and 12 Base Stations

For acceptance of 6 or 12 process modules

- Modular and scalable machine concept
- Visualization by a touch display
- Batch administration
- Recipe-controlled parameterization
- Alarm management
- Local control units
- Individual lifting units for each process module
- Output up to 1,200 plates/hour



ImmuCoat® Stacking Unit

Stacking Unit for up to 50 microplates

- For microplate infeed and outfeed
- Usable as an error-stacker to separate rejected plates in combination with the fill level verification module
- Usable as a control-stacker to perform a quality check of the microplates
- Combination of several stackers possible



Enclosed exchangeable incubation magazine

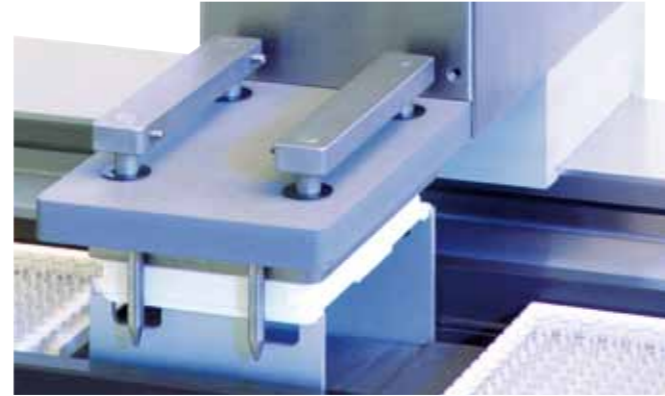
ImmuCoat® Stacking Conveyor

Stacking Unit for up to 300 microplates

- Increased capacity
- For microplate infeed and outfeed



ImmuCoat® Pressing Unit



For single break microplates

- To avoid machine downtimes or damages, the microplate strips are pressed into an exact position

ImmuCoat® Manifold 8 Dosing Unit

Dosing unit for:

**Antigens
Antibodies**

- Very high dispensing precision
- Low dead volume
- Combination of 1-12 heads on one module position possible
- All dosing needles supplied by one dosing system
- **Pump type:** Syringe pump



ImmuCoat® Single Channel 8 Dosing Unit



Dosing unit for:

**Antigens
Antibodies**

- Highest dispensing precision
- Very low dead volume
- Can dispense individual liquids
- Dosing of up to 8 different liquids per head
- Combination of 1-12 heads on one module position possible
- Every dosing needle supplied by its own dosing system
- **Pump types:** Metering pumps, Syringe pumps



ImmuCoat® Manifold 96 Dosing Unit

Dosing unit for:

**Antigens
Antibodies
Washing and Blocking solutions**



- High dispensing precision
- Maximum throughput reachable
- Liquids are dosed into all wells at the same time
- All dosing needles supplied by one dosing system
- **Pump type:** Syringe pump

ImmuCoat® Aspiration Unit



For aspiration of liquids

- Adjustable vacuum pressure
- Liquid collected and separated in aspiration vessel
- Liquids are aspirated at the same time
- **Option:** Finishing aspirator with highest aspiration performance

ImmuCoat® Washing Unit



Unit, both for the dosing and aspiration of liquids

- Inner needle to dose liquids
- External needle to aspirate liquids
- Different needle concepts available
- Dispenses and aspirates in one cycle
- Washing parameters adjustable
- All dosing needles supplied by one pump system, one supply vessel, and one aspiration vessel
- **Pump type:** Syringe pump



ImmuCoat® Vacuum Unit



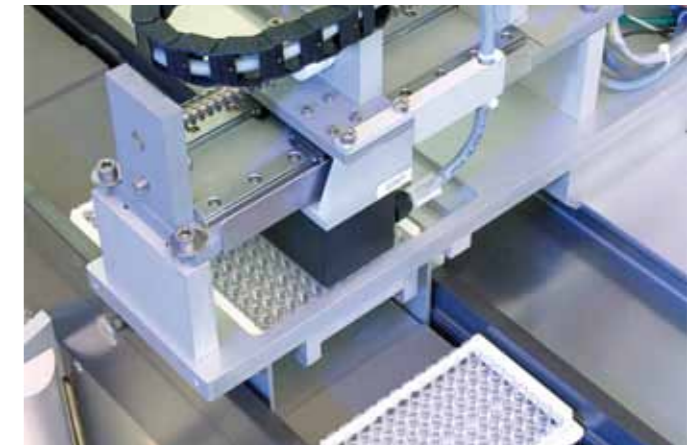
Base system to aspirate liquids

- Basic part of aspiration unit and washing unit
- Consisting of collection vessel with level detection
- Vacuum pump including pressure verification
- Peristaltic pump to maintain the liquid level

ImmuCoat® Fill Level Verification

Module to check the fill level in every single well

- Based on an octuple ultrasonic sensor
- Recommended in combination with error stacker to stack up rejected plates



ImmuCoat® Electrostatic Discharge

Discharging Module

- To prepare plates for inkjet printing
- Improves dosing results by reducing bevel meniscuses and bubbles



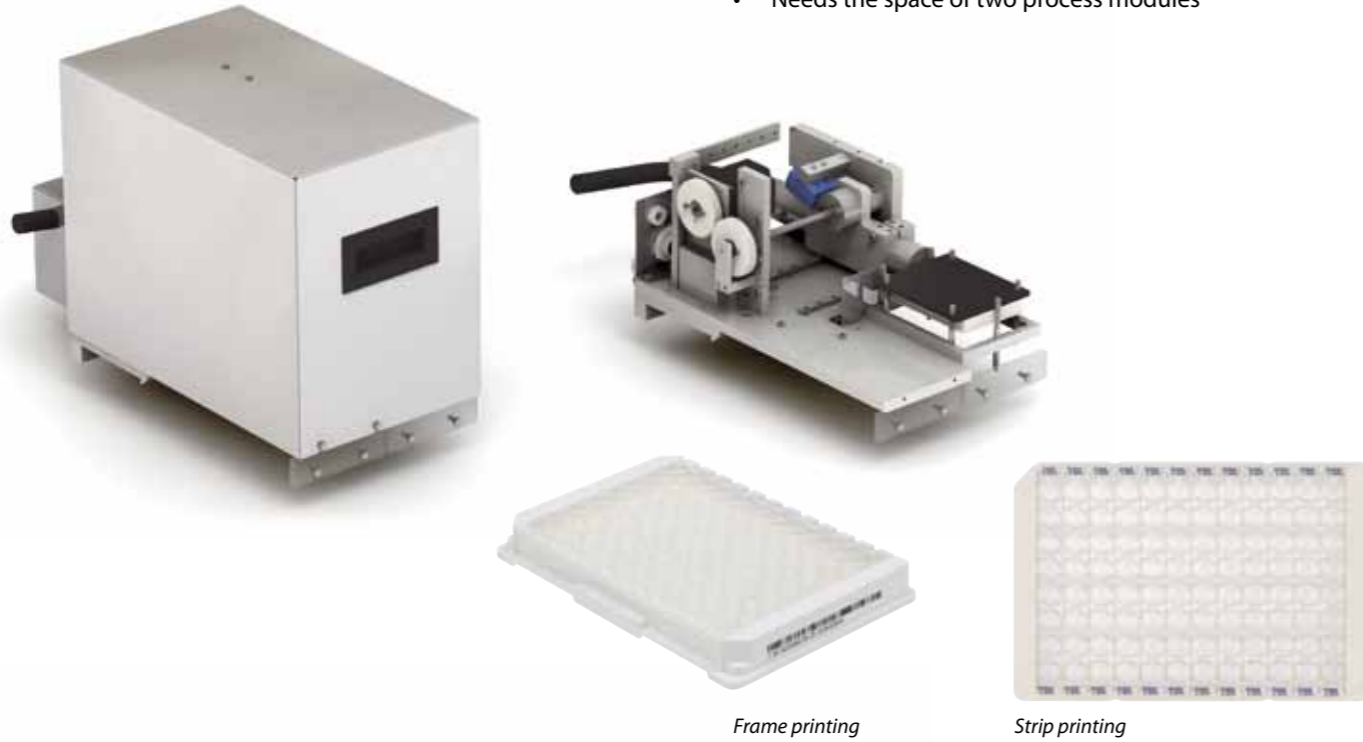
ImmuCoat® Printing Unit

Unit to print on the microplates

Horizontal print: on the frame (barcode, text)

Vertical print: on the single strips (text)

- Needs the space of two process modules



ImmuCoat® Incubator / Dryer

Unit to incubate the coated microplates

- Can be integrated with a line
- Stand-alone functionality
- First-in, first-out working principle (FIFO)

Capacity: 2,880 microplates

- Options:**
- Incubator without climate control
 - Incubator with climate control (temperature: 4–37°C, humidity: 40–90% rH)
 - Combined incubator / dryer (temperature: 4–37°C, humidity: 10–90% rH)



ImmuCoat® Labeling Unit

Unit to label microplates

- Printing of labels (text, barcode)
- Frame labeling of microplates on 1–4 sides
- Handling system for picking and turning microplates
- Scanner for barcode verification
- Needs the space of 6 process modules



ImmuPouch Unit



Pouch Packaging System for microplates

- Pouches with or without zipper
- Uses pre-made pouches
- Can be integrated with a production line
- Stand-alone functionality

Standard dimensions of pouch:

- length 200–270 mm
- width 140–165mm

Throughput:

- up to 20 pouches/minute

Options:

- Vacuum packaging
- Dessicant dispenser
- Thermotransfer printing on pouch
- Labeller
- Pouch maker to supply empty pouches made from roll stock



For filling of Immunoassay test kit reagents

The monoblock filling and closing machine **ImmuFill** achieves a performance of up to 70 pcs./min.

The machine masters all common container and closure types such as:

- Bottles
- Vials
- Screw caps
- Stoppers
- Press on caps



More Information:
www.optima-lifescience.com

OPTIMA life science GbmH

Steinbeisweg 20
74523 Schwaebisch Hall
Tel.: +49 791 506-1900
Fax: +49 791 506-1520
info@optima-lifescience.com
www.optima-lifescience.com

OPTIMA Packaging Machinery PLC

7 Loader Close
Kings Worthy
Hampshire SO23 7TF, Great Britain
Tel.: +44 1962 620898
Fax: +49 791 506 6500
info@optima-gb.com

OPTIMA packaging France S.A.R.L.

Zone d'Activités de l'Énergie
4, rue Ampère B.P. 9
59559 Comines Cédex, France
Tel.: +33 320 6306-40
Fax: +33 320 6306-41
info@optima-fra.com
www.optima-fra.com

AMOTEK S.r.l. a socio unico

Via Piemonte 5
40069 Zola Predosa
Bologna, Italy
Tel.: +39 051 61868-11
Fax: +39 051 61868-88
sales@amotek-ita.com
www.amotek-ita.com

OPTIMA Machinery Corporation

1330 Contract Drive
Green Bay, WI 54304, USA
Tel.: +1 920 339-2222
Fax: +1 920 339-2233
info@optima-usa.com
www.optima-usa.com

OPTIMA packaging machines, S.A. de C.V.

San Jorge 198
Col. Pedregal Santa Úrsula
Del. Coyoacán
C.P. 04600 México, D.F. México
Tel.: + 52 55 5421-0271
Fax: +52 55 5610-4452
info@optima-mex.com
www.optima-mex.com

OPTIMA do Brasil Máquinas de Embalagem Ltda.

Rua Joana Foresto Storani, 500
13280-000 Vinhedo - SP, Brazil
Tel.: +55 19 3886-9800
Fax: +55 19 3886-9810
info@optima-bra.com
www.optima-bra.com

OPTIMA India packaging machines Private Limited

No. 2, 2nd Floor, Sree Datri Nivas
Nagwara Circle, Outer Ring Road
Opp. Manyata Softech Park
Bengaluru – 560045
Karnataka, India
info@optima-ind.com
www.optima-ind.com

OPTIMA Japan Co. Ltd.

362 Shimizu-cho
Kawaramachi-dori
Nijio-agaru, Nakagyo-ku
Kyoto 6040911, Japan
Tel.: +81 75 223-1588
Fax: +81 75 223-1595
optima@alles.or.jp

OPTIMA Korea Ltd.

1107 HyunDai Topics Bldg
44-3 Bangi-dong, Songpa-ku,
Seoul 138-050, Korea
Tel.: +82 2 414 7105
Fax: +82 2 414 7106
info@optima-kr.com

OPTIMA Packaging Machines (Shanghai) Co., Ltd.

No. 695 Fengmao Road
Malu Town, Jiading District
Shanghai 201801, China
Tel.: +86 21 6707 0888
Fax: +86 21 6707 0889
info@optima-cn.com
www.optima-cn.com

OPTIMA PACKAGING MACHINES (M) SDN. BHD.

5008 A 1st Floor
Jalan Lunas, Batu 2.5
09000 Kulim, Kedah
Malaysia
Tel.: +60 4 495 1619
info@optima-mal.com
www.optima-mal.com