

INCREASE YOUR LAB EFFICIENCY

CoolSafe
Freeze Dryers
4-15 Litres

Scandinavian by Design



LABOGENE

COOLSAFE

4-15 LITRES

CoolSafe 4-15 L is an outstanding and versatile range of advanced bench-top freeze dryers. They are the product of more than 40 years' experience and expertise, and are the ideal choice for research, process development and small-scale production.

Available in 3 different capacities:

- 4 litres.
- 9 litres.
- 15 litres.

All come with a choice of condenser temperatures and a wide range of high-quality chambers and accessories. All models offer both simplicity of operation and the highest performance characteristics to meet the demands of today's research and development laboratories.

Proven track record in:

- Quality control – typically for:
 - Food materials.
 - Bacteria.
 - Meat and dairy products.
- Improved preservation – typically for:
 - Floral materials.
 - Vaccines and anti-toxins.
 - Tissues and cells.
 - Fish, shellfish, milk (such as goat & horse milk) and dairy products, vegetables, edible mycelia, soft fruits and berries etc.
- Conservation of archaeological items, such as wood, leather, textiles etc.
- Restoration of water damaged books, documents and paper materials.

The CoolSafe 4-15 L range is suitable for research, testing and production on a minor scale.





What LaboGene's freeze dryers offer:

- Lowest condenser temperatures of -55°C , -95°C , -100°C or -110°C .
- Seamless stainless steel condenser with external cooling coils, heavily insulated to conserve energy and increase performance.
- Easy draining with built-in valve, allowing removal of defrost water and/or solvents after a completed freeze-drying session.
- Easy operation with a built-in vacuum valve connecting the condenser and vacuum pump and allowing the condenser to cool down and the vacuum pump to warm up separately, ensuring an efficient start-up sequence.

MEET THE COOLSAFE FAMILY

LaboGene's 4-15 L freeze dryers are available in 4 variants: Basic, Pro, Touch and Superior XS/XL, designed to meet the demands of laboratories of all types.



COOLSAFE BASIC

- Digital display of the condenser temperature.
- Wide choice of small chambers, manifolds and accessories to suit your sample requirements.
- Available with 4-litre condenser capacity and temperature options of -55°C or -110°C and condenser ice capacity of 2.5 kg/24 hours - max. 3 kg in total.
- Available with 9-litre condenser capacity and temperature option of -55°C and condenser ice capacity of 4 kg/24 hours - max. 7 kg in total.

COOLSAFE PRO

- Digital display of the condenser temperature and pressure.
- Wide choice of manifolds, chambers and accessories to suit your sample requirements.
- Available with 4-litre condenser capacity and temperature options of -55°C or -110°C and condenser ice capacity of 2.5 kg/24 hours - max. 3 kg in total.
- Available with 9-litre condenser capacity and temperature options of -55°C or -100°C and condenser ice capacity of 4 kg/24 hours - max. 7 kg in total.
- Available with 15-litre condenser capacity and temperature options of -55°C or -95°C and condenser ice capacity of 6 kg/24 hours - max. 10 kg in total.

Need a customized solution?
For more information visit
www.labogene.com



COOLSAFE TOUCH

- New touchscreen controller with regulation of temperature, pressure and time.
- Freeze-drying with programming and storage of protocols for full research and method development.
- Wide choice of manifolds, chambers with heated shelves and accessories to suit your sample requirements.
- Available with 4-litre condenser capacity and temperature options of -55°C or -110°C and condenser ice capacity of 2.5 kg/24 hours - max. 3 kg in total.
- Available with 9-litre condenser capacity and temperature options of -55°C or -100°C and condenser ice capacity of 4 kg/24 hours - max. 7 kg in total.
- Available with 15-litre condenser capacity and temperature options of -55°C or -95°C and condenser ice capacity of 6 kg/24 hours - max. 10 kg in total.

COOLSAFE SUPERIOR XS/XL

- New touchscreen controller with regulation of temperature, pressure and time.
- Possibility of pre-freezing your samples.
- Freeze-drying with programming and storage of protocols for full research and method development.
- With the automatic system, it is possible to create your own personal program for each sample – starting with pre-freeze, then primary drying and ending with secondary drying. This secures the highest performance and ensures that the quality of your samples will be the same every time.
- The XS version is inclusive of a 3 electrical heated shelf rack for pre-freezing inside the condenser. For the XL version, you can choose between a 3 or a 5 electrical heated shelf rack.
- PT sensors for precise shelf temperature regulation.
- XS is available with a 9-litre condenser and a temperature option of -100°C and condenser ice capacity of 1 kg/24 hours.
- XL is available with a 15-litre condenser and a temperature option of -95°C and condenser ice capacity of 2 kg/24 hours.

WHAT CONDENSER TEMPERATURE IS NEEDED?

The choice of condenser temperature is important! If the temperature is too high, then a correct freeze drying process cannot take place.

In the table to the right are the freezing points/collapsing temperatures of some commonly used solvents and known products. These are given for guidance purposes and to assist in deciding the condenser temperature for your application.



If the condenser temperature is near to the freezing point of the sample, then the freeze drying cycle times are extended.

The product could possibly start to melt, thus giving very poor recovery rates and enhancing the possibility of damaging the vacuum pump, eventually polluting the laboratory environment. This phenomenon is known as a "collapse" of the sample.

The driving force in freeze drying is expressed as the temperature/pressure differential between the product and the condenser.

In conclusion, the lower the condenser temperature, the better! For example, for aqueous samples a -55°C condenser temperature is the preferred choice.

However, a lower temperature condenser will provide faster freeze drying, avoiding melting and give better results, with the additional benefit of protecting the vacuum pump and the environment.

Collapsing temperatures of different products

Products	Temperatures
Apple Juice	-42°C
Citrate Buffer	-40°C
Coffee Extract	-20°C
Dextran	-9°C
Fruktose	-48°C
Gelatin	-8°C
Glucose	-40°C
Inisitol	-27°C
Lactose	-32°C
Lemon Juice	-36°C
Methocel	-9°C
MSG	-50°C
Orange Juice	-24°C
Ovalbumim	-10°C
Phosphate Buffer	-8°C
PVP	-23°C
Sorbitol	-45°C
Sucrose	-32°C
Solutions containing ethanol etc.	-60°C – -110°C
Trichlorethylène	-86,4°C

TOP LIDS -Select the lid required for your application

For CoolSafe Basic, Pro and Touch



Acrylic lid (ACPl)
Acrylic plate on the top of the CoolSafe including vacuum release.

This facilitates all non-heated chambers (CCS200 and 300) and manifold M4 basic.

Art no.: 700100061



CCS 300 lid with hole for M4 basic manifold
Extra top plate for CCS 300 with drilled hole for adaption of M4 Basic.

Art no.: 711000615

MANIFOLDS -Select the manifold required for your application

For CoolSafe Basic, Pro and Touch



Manifold 4 Basic
Manifold Basic with 4 rubber valves 3/4 inch for freeze drying in flasks. (Can be extended with the addition of Manifold 4 Extension).

Art no.: 700100062



Manifold 4 Extension
Manifold extension including 4 rubber valves 3/4 inch for freeze drying in flasks.

Art no.: 700100063



Complete M4 Manifold +Manifold 4 Extension + ACPl



Drum manifold
Drum manifold made of stainless steel.

Included are 12 3/4 inch rubber valves.

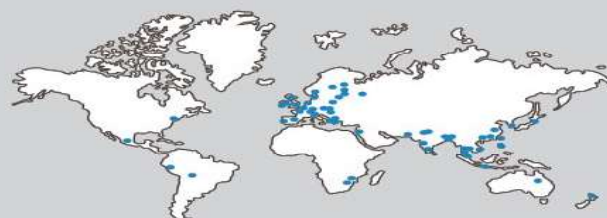
The ACPl lid is not necessary to use this manifold.

Art no.: 700100063



Ampoule manifold 16
Ampoule manifold made of stainless steel for 3/4 inch rubber valves with 16 x 6 mm pipes. Included is 1,5 meter hose.

Art no.: 700100076



Additional information

Please contact the LaboGene distributor in your specific country or visit our webpage www.labogene.com

CHAMBERS

Non-heated chambers

- to be used with the Basic, Pro or Touch models.

Various sizes and formats are available which offer complete flexibility of use. These include options for stoppering, attachment of flasks, and racks with removable shelves.

Chamber CCS 200



Chamber CCS 200, ø200 mm
Polycarbonate chamber ø200 mm including 2 x ø180 mm adjustable stainless steel shelves and trays.

Distance between shelves:
Min. 20 mm with 6 shelves.
Max. 105 mm with 2 shelves.
(Possibility to have up to 6 shelves and trays).

Art no.: 7001000064



Rack 200
Extra rack for CCS 200 including 2 shelves and trays for pre-freezing.

Art no.: 7001000287



Tray 200
Extra stainless steel tray ø180 mm x 18 mm for CCS 200 chamber.

Art no.: 7001000264



Shelf ø180 mm
Extra stainless steel shelf for CCS 200 chamber.

Note it only works as support for the tray.

Art no.: 7001000164

Chamber CCS 300



Chamber CCS 300, ø300 mm
Acrylic chamber ø300 mm with 3 stainless steel shelves ø250 mm and 3 trays with adjustable height.

Distance between shelves:
Min. 28 mm with 12 shelves.
Max. 328 mm with 2 shelves.
(Possibility to have up to 12 shelves and trays).

Art no.: 7001000085



Chamber, CCS 300 4V, ø300 mm

Acrylic chamber ø300 mm with 3 stainless steel shelves ø250 mm, 3 trays with adjustable height and 4 x 3/4 inch rubber valves.

Distance between shelves:
Min. 28 mm with 12 shelves.
Max. 328 mm with 2 shelves.
(Possibility to have up to 12 shelves and trays).

Art no.: 7001000086



Chamber, CCS 300 8V, ø300 mm

Acrylic chamber ø300 mm with 3 stainless steel shelves ø250 mm, 3 trays with adjustable height and 8 x 3/4 inch rubber valves.

Distance between shelves:
Min. 28 mm with 12 shelves.
Max. 328 mm with 2 shelves.
(Possibility to have up to 12 shelves and trays).

Art no.: 7001000087



Chamber, CCS 300 with stoppering arrangement

Acrylic chamber ø300 mm with 3 shelves ø250 mm with mechanical stoppering arrangement.

Distance between shelves:
Min. 20 mm
Max. 78 mm
Total 0,15 m2 shelf area.

Art no.: 7001000187



Shelf ø250 mm

Extra stainless steel shelf for CCS 300 chamber.

Please note that the shelf only acts as support for the tray.

Art no.: 7001000185



Tray 300

Extra stainless steel tray ø250 mm x 21 mm for CCS 300 chamber.

Art no.: 7001000285



Rack 300

Extra rack for CCS 300 including 3 shelves and trays for pre-freezing.

Art no.: 7001000387



Rack micro-titre plate

Rack for 3 x 14 micro-titre or 3 x 7 micro-titre plates for CCS 300 chamber.

Art no.: 7001000479

PUMPS

Select the vacuum pump most suited for your freeze dryer/chamber combination.



Vacuum pump, RZ 2.5

30 L/min and 2,5 m³/hour. The ultimate vacuum is 0,001 mBar with anti-blow back valve.

Included is the oil mist filter – art no.: 7001500071.

Art no. for 230V/50Hz version: 7001500069

Art no. for 110V/60Hz version: 7001506069



Vacuum pump, RZ 6

105 L/min and 6,0 m³/hour. The ultimate vacuum is 0,001 mBar with anti-blow back valve.

Included is the oil mist filter – art no.: 7001500071.

Art no. for 230V/50Hz version: 7001510070

Art no. for 110V/60Hz version: 7001516070



Vacuum pump, RC 6 Chemistry hybrid pump

Chemistry hybrid vacuum pump. 5.9/6.9 m³/hour. The ultimate vacuum is 0,002 mBar.

Included is the oil mist filter – art no.: 7001500071.

Art no. for 230V/50Hz version: 7001510071



Vacuum pump, RZ 9

140 L/min and 8,6 m³/hour. The ultimate vacuum is 0,0002 mBar. Included is the oil mist filter – art no.: 7001201070.

Art no. for 230V/50Hz version: 7001201169



LABOGENE

ACCESSORIES

Practical accessories for your consideration.



SVM 85

ScanVac Vacuum Meter, absolute pressure is 1200-0.001 mBar, with data-logging facility, NV 10 and flange. Including connection kit for SVM 85.

For CoolSafe Basic.

Art no.: 7001000269



Connection kit for 2 chambers

T-kit with 2 x 3/4 inch rubber valves for connection of 2 chambers to 1 vacuum pump.

Art no.: 7001000077



Trolley, freeze drying

Compact trolley for one CoolSafe and Vacuum pump.

Art no.: 7001100950



Gate valve

Valve enabling closure between CoolSafe and a ø500 chamber.

Art no.: 7001500879



Castors

Set of 4 pieces, with 2 which are lockable. For mounting on a freeze dryer. It can be mounted on the following versions: CoolSafe 55-4, CoolSafe 55-9 and CoolSafe 110-4.

Art no.: 7001000066

40

YEARS OF EXPERIENCE

LaboGene are experts in the fields of Clean Air & Laminar Flow, Centrifugation, Vacuum & Cooling. We provide both standard and perfectly customized solutions. Designing, developing, manufacturing and marketing laboratory and industrial equipment is our speciality.

Leading supplier in:

Microbiological safety cabinets
Freeze dryers
Freezers
Centrifuges

Learn more at www.labogene.com



LaboGene ApS
Bjarkesvej 5
DK-3450 Allerød

Tel (+45) 3940 2566
Fax (+45) 3995 2566
Email info@labogene.com
Web www.labogene.com



001