

LABORATORY DIVISION

SMALL ENOUGH
TO CARE
BIG ENOUGH
TO DARE

The logo for Kambič features the name in a grey, italicized serif font. A red swoosh underline starts under the 'K', curves under the 'i', and ends under the 'č'.

Kambič

Product families

Climatic Chambers

Walk-in Climatic Chambers

Stability Testing Climatic Chambers

Plant Growth Chambers

Performance Ovens

High Temperature Ovens

Vacuum Ovens

Laboratory Freeze Dryers

Industrial Freeze Dryers

Pass Boxes

Vacuum Modified Atmosphere Packing Systems

Tailored Equipment



Climatic Chambers

- Temperature and humidity control
- Maintaining superior temperature & Rh stability
- Accelerated ageing
- Stress tests
- Optional water cooling
- Optional fast cooling rate up to 10 K/min

Climatic Chamber

Model: **KK-1000 CHLT**

Volume: **1000 L**

Temperature range: **-40 °C...+180 °C**

Temperature stability: **±0.5 °C @ -40 °C**
±0.04 °C @ 50 °C 50% Rh
±0.1 °C @ 90 °C 90% Rh
±0.1 °C @ 180 °C

Relative humidity range: **10 %... 98 %**

Temperature uniformity: **±0.5 °C @ -40 °C**
±0.4 °C @ 50 °C 50 % Rh
±0.5 °C @ 90 °C 90 % Rh
±1.0 °C @ 180 °C



KK-CH

(+5 °C...+180 °C)



Models:

KK-50 CH

KK-105 CH

KK-190 CH

KK-340 CH

KK-500 CH

KK-1000 CH

KK-CHLT

(-40 °C...+180 °C)



Models:

KK-50 CHLT

KK-105 CHLT

KK-190 CHLT

KK-340 CHLT

KK-500 CHLT

KK-1000 CHLT

KK-CHULT

(-75 °C...+180 °C)



Models:

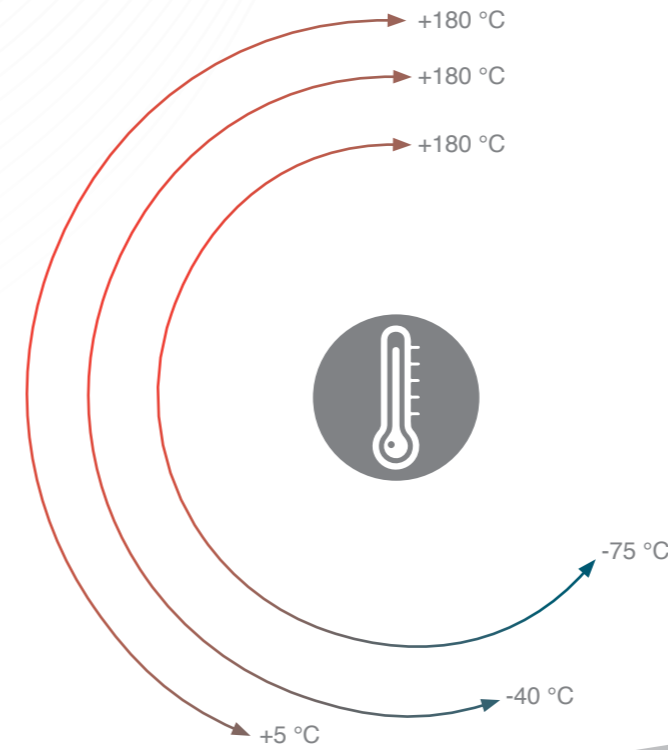
KK-105 CHULT

KK-190 CHULT

KK-340 CHULT

KK-500 CHULT

KK-1000 CHULT



CHAMBER SIZE = CHAMBER VOLUME IN LITERS

CHAMBER INTERIOR DIMENSIONS (WXHXD) in mm for CH & CHLT models

CHAMBER INTERIOR DIMENSIONS (WXHXD) in mm for models CHULT

50

400 x 375 x 350

/

105

490 x 498 x 430

530 x 500 x 460

190

600 x 610 x 510

620 x 590 x 515

340

600 x 830 x 685

620 x 810 x 690

500

800 x 800 x 800

870 x 800 x 800

1000

1000 x 1000 x 1000

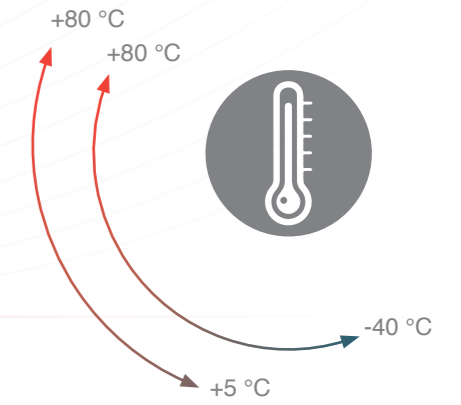
1000 x 1000 x 1000

Same sizes and temperature ranges available also as temperature chamber only, without relative humidity control.



Walk-in Climatic Chambers

- Temperature and relative humidity controlled environment
- Stability testing
- Maintaining superior temperature & Rh stability
- Sample conditioning prior to other tests
- Accelerated ageing
- Stress tests
- Rain simulation (optional)
- Wind simulation (optional)
- Radiation simulation (optional)



Open air installation:



Open room installation:



- 1 Compressor based refrigeration system. Condensing unit mounted on the top of the chamber or placed in any other spot of the chamber.
- 2 PLC based controller. Simple and effective programming of all processes. SW pack for PC available.
- 3 Electronics compartment. Mounted on the chamber or remote location.
- 4 Extensive heat insulation. Various insulation panel thicknesses.
- 5 Access port with both end plugs Ø40, Ø50 or Ø90.
- 6 Heavy duty closing mechanism with safety unlocking system from interior.
- 7 Fully stainless steel interior. Exterior powder coated RAL 9010 (other colors available on request).
- 8 Sealed and extensively heat insulated door – Various sizes available.
- 9 Door observation window.
- 10 Backup unit (optional).





Stability Testing Climatic Chambers

Perfect tool for stability testing in pharmaceutical Industry.

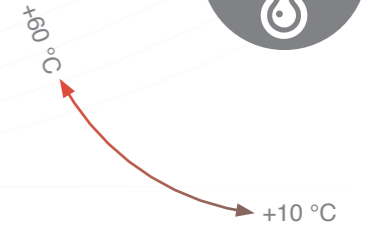
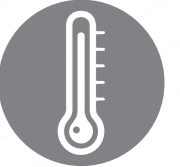
- Following ICH guidelines
- GMP Qualification package available
- Number of different volumes available
- Calibrated at all ICH points

25 °C±2 °C / 60% Rh±5%
 30 °C±2 °C / 65% Rh±5%
 40 °C±2 °C / 75% Rh±5%
 25 °C±2 °C / 40% Rh±5%
 30 °C±2 °C / 35% Rh±5%
 40 °C±2 °C / 20% Rh±5%

KK-820 CHS



KK-1300 CHS



Stability testing climatic chambers

Model: **KK-1300 CHS**

Volume: **1300 L**

Temperature range: **+10 °C... +60 °C**

Temperature stability: **±0.1 °C**

Temperature uniformity: **±0.8 °C @ 25 °C / 60 Rh**

±0.8 °C @ 40 °C / 75 Rh



CHAMBER SIZE = CHAMBER VOLUME IN LITERS

820

1300

EXTERIOR DIMENSIONS (WXHxD) in mm

1170 x 1950 x 960

1600 x 1960 x 955

INTERIOR DIMENSIONS (WXHxD) in mm

980 x 1350 x 620

1480 x 1400 x 620



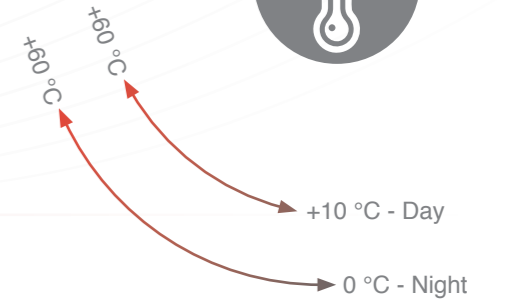
Plant Growth Chambers

- Three different sizes (small, medium, large)
- Easy to use fully programmable controller
- State of the art repeatability
- Day light simulation control
- Relative humidity control
- Temperature control
- CO₂ control (optional)

RK-340 CH

RK-500 CH

RK-1000 CH



Plant Growth Chamber

Model: **RK-340 CHCO₂**

Volume: **340 L**

Temperature range: **0 °C...+60 °C – Night**

+10 °C...+60 °C – Day

CO₂ range: **0%...20%**



CHAMBER SIZE = CHAMBER VOLUME IN LITERS	EXTERIOR DIMENSIONS (WXHXD) in mm	INTERIOR DIMENSIONS (WXHXD) in mm
340	834 x 1895 x 1135	600 x 830 x 685
500	1600 x 1980 x 700	680 x 1400 x 520
1000	2040 x 1983 x 886	1045 x 1400 x 700



Performance Ovens

Drying, heat treatment, surface treatment, curing all at precise temperatures.

- Pilot & research hot air drying
- Drying after washing

- Material preheating
- Hot air sterilization
- Tooling preheating
- Fills curing

SP-55 C

SP-105 C

SP-190 C

SP-440 C

SP-910 C

SP-1300 C



Performance Oven

Model: **SP-910 C**

Volume: **910 L**

Temperature range: **Tambient +5 °C... +300 °C**

Temperature stability **±0.1 °C**

Temperature uniformity: **±1.3 @ 60 °C**

±1.7 @ 100 °C

±3.5 @ 200 °C

With accessories: **Exhaust fan unit**

Performance Oven

Model: **SP-190 C**

Volume: **190 L**

Temperature range: **Tambient +5 °C... +300 °C**

Temperature stability **±0.1 °C**

Temperature uniformity: **±0.3 @ 60 °C**

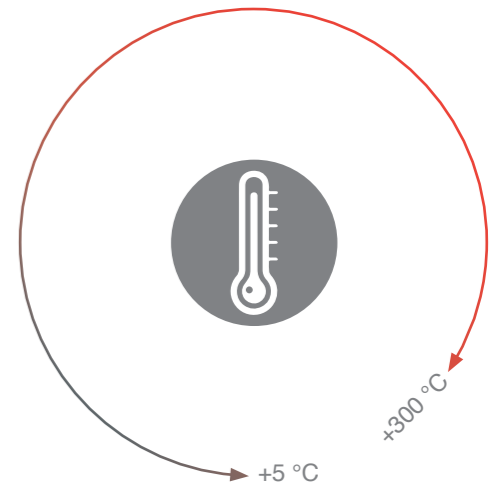
±0.7 @ 100 °C

±1.0 @ 200 °C

With accessories: **Cut out notch 100 x 50 mm**

2x access port Ø90 mm

Observation window with chamber illumination



CHAMBER SIZE = CHAMBER VOLUME IN LITERS

EXTERIOR DIMENSIONS (WXHxD) in mm

INTERIOR DIMENSIONS (WXHxD) in mm

55

510 x 535 x 575

400 x 400 x 345

105

725 x 725 x 715

490 x 500 x 440

190

835 x 840 x 790

600 x 615 x 515

440

1235 x 1025 x 835

1000 x 800 x 550

910

1280 x 1975 x 870

1000 x 1300 x 730

1300

1340 x 105 x 990

1060 x 430 x 850



High Temperature Ovens

Heat treatment, surface treatment, curing all at precise temperature.

- Heat treatment for stress release
- Heat treatment for sintering

- High temperature drying
- Molds preheating
- Fills curing

SP-60 C FIRE

SP-190 C FIRE

SP-420 C FIRE

SP-875 C FIRE



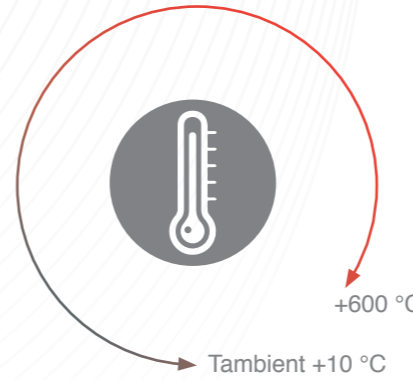
High Temperature Oven

Model: **SP-875 C FIRE**

Volume: **875 L**

Temperature range: **Tambient +10 °C... +600 °C**

Temperature stability: **±1.0 °C @ 350 °C**



- 1 PLC based controller. Simple and effective programming of all process steps, including optional manual controls. RS-232, USB or Ethernet communication ports.
- 2 Adjustable over temperature shutdown.
- 3 Main switch with power phase indicator.
- 4 High capacity fan for air circulation in chamber. Ensuring temperature stability and uniformity.
- 5 Height adjustable shelves (additional shelves optional).
- 6 Heavy duty closing mechanism with adjustable position / closing force.
- 7 Chamber door with floating inner insulation door ensuring low surface temperature even at max temperature.
- 8 Fully enclosed design with AISI 304 stainless steel exterior.
- 9 AISI 304 stainless steel chamber, designed for temperatures up to 600 °C.
- 10 Industrial heavy duty temperature sensor.
 1. control sensor
 2. over temp cutoff



CHAMBER SIZE = CHAMBER VOLUME IN LITERS	EXTERIOR DIMENSIONS (WXHxD) in mm	INTERIOR DIMENSIONS (WXHxD) in mm
60	712 x 673 x 655	400 x 400 x 400
190	942 x 883 x 836	600 x 600 x 543
420	1062x973x1030	750 x 700 x 755
875	1461x768 x1066	998 x 1250 x 700



Vacuum Ovens

Drying in vacuum down to 1 mbar with heated shelves.

- Determination of vacuum drying process parameters

- Low temperature evaporation
- Drying curves determination
- Dry mass determination
- Pilot vacuum drying

VS-8 SC



VS-25 SC



VS-50 SC



VS-130 SC



Vacuum Oven

Model: **VS-130 SC**

Volume: **130 L**

Temperature range: **Tambient... +200 °C**

Temperature stability: **±0.1 °C**

Temperature uniformity: **±0.5 °C @ 60 °C**

±0.6 °C @ 100 °C

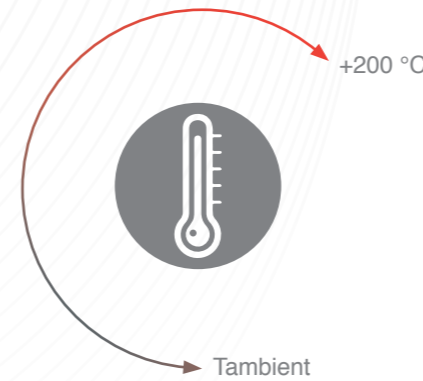
±1.6 °C @ 150 °C

With accessories: **Additional access flange**

(100 x 400 mm)

Trolley

Vacuum pump



Vacuum Oven

Model: **VS-8 SC**

Volume: **8 L**

Temperature range: **Tambient +5 °C... +200 °C**

Temperature stability: **±0.1 °C**

Temperature uniformity: **±0.5 °C @ 60 °C**

±0.5 °C @ 100 °C

±0.8 °C @ 150 °C

±1.3 °C @ 200 °C



CHAMBER SIZE = CHAMBER VOLUME IN LITERS

8

25

50

130

EXTERIOR DIMENSIONS (WXHXD) in mm

390 x 425 x 500

480 x 602 x 430

730 x 510 x 495

670 x 856 x 725

INTERIOR DIMENSIONS (WXHXD) in mm

200 x 208 x 200

300 x 275 x 307

405 x 340 x 370

495 x 495 x 530



Laboratory Freeze Dryers

Refined solution for laboratory and R&D freeze drying.

- Preservation of bacteria and viruses
- Freeze drying cycle development
- Freeze drying recipe optimization
- Research

LIO-5 P



LIO-5 PLT



LIO-8/5P



Laboratory Freeze Dryer

Model: **Liosmart 8/5P**

Ice condenser performance: **4kg/24h**

Ice condenser temperature: **-55 °C/-95 °C (optional)**

Shelf surface capacity: **0.18 m²**

Shelf temperature range: **-40 °C...+60 °C**



- 1 Cylindrical AISI 304 stainless steel condenser, polished to Ra<0,5 µm with flat connecting flange for simple installation of accessories.
- 2 Fully enclosed design with powder coated exterior.
- 3 Trolley for LIO-5 P and LIO-5 PLT.
- 4 Drain and vacuum break valve.
- 5 Vacuum control valve (optional).
- 6 Vacuum pump equipped with oil mist filter and all the necessary connection tubes and clamps.
- 7 Touch screen based controller with user friendly interface, history graph advance settings options RS-232, USB or Ethernet communication ports.
Pirani vacuum gauge for pressure monitoring and control.
Vacuum control for ultimate performance (optional).



- 8 8 port manifold for freeze drying from glass flasks.
- 9 Transparent cylinder with 6 trays. Each tray Ø 250 mm.
- 10 Transparent cylinder with 2 heated and temp. controlled shelves. Each tray Ø 200 mm.
- 11 Transparent cylinder with 4 stoppering shelves and guard trays Ø 200 mm.



MODEL	Total condenser capacity	Condenser temperature (°C)
LIO-5 P	5	-55
LIO-5 PLT	5	-100
LIOSMART 8/5P	6	-55/-95

*More details in the dedicated Technical Data Sheet.

SMALL ENOUGH TO CARE BIG ENOUGH TO DARE



Industrial Freeze Dryers

Refined solution for rapid, repeatable small or industrial scale freeze drying.

- Dairy products (milk, starter cultures, yoghurts, probiotics, ice-cream,...)
- Vegetables & fruits (strawberries, figs, beans,...)
- Fish & meat
- Floral



Industrial Freeze Dryer

Model: **LIO-25 FP**

- New tool for economical and productive freeze-drying
- 2,5 m² shelf area
- Shelf temperature control heating function only
- -55 °C condenser coil temperature
- 50 recipes, each with up to 50 segments
- Software packet with remote control via virtual user interface
- Single compressor refrigeration system
- Dry vacuum pump build-in frame



Industrial Scale Freeze Dryer

Model: **LIO-300 FP**

- Ice condenser capacity: **300 kg**
- Ice condenser temperature: **-50 °C**
- Shelf surface capacity: **3 trolleys, each with 25 trays**
- Total trays capacity: **19.5 m²**





Pass Box

Pass-Through Chamber.
Material Transfer Hatch.

- Stainless steel interior & exterior housing with mirror polish finish
- Large radius corners making it perfectly cleanable & sealable

- Single-handed operation
- Power supply free innovative reliable interlock (mechanical)
- Installation parts included as standard
- Variety of accessories and dimensions
- Tempered 12 mm full glass door
- More than 500 installations worldwide

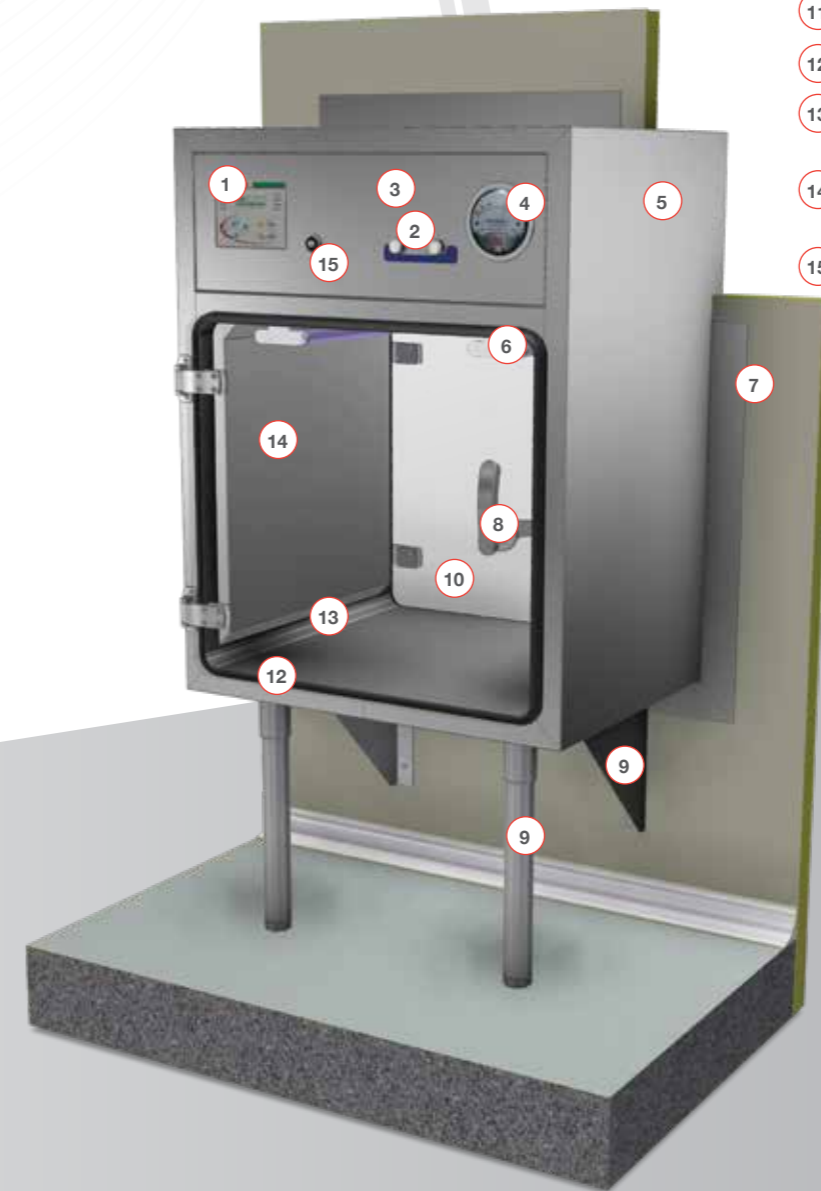
Pass Box

Model: **PB-6/6/6 UV**

Internal dimension: **600 x 600 x 600 mm**

External dimensions: **700 x 700 x 700* mm**

Equipment: **Both sides HMI,
UV decontamination**



- 1 PLC based controller with LED semaphore. Two line LCD display on both sides. Variety of options.
- 2 DOP test connection (optional).
- 3 Hepa filter H14 optional. Air shower (optional).
- 4 Differential pressure manometer (Filter saturation).
- 5 Stainless steel construction AISI 304 or AISI 316 (optional).
- 6 UV sterilization (optional).
- 7 Covering frame for both sides.
- 8 Mechanical or electromechanical interlock with key lockable handle.
- 9 Height adjustable supporting leg or wall console.
- 10 H₂O₂ connectors (optional).
- 11 Shelves or tailored racks (optional).
- 12 Soft profile silicon seal.
- 13 Perfectly round corners ensuring simple and effective easy cleaning.
- 14 Fully tempered glass door for ultimate visibility, UV protection (optional).
- 15 Flat floor design for simple trolley push through (optional).



Vacuum Modified Atmosphere Packing Systems

V M A P
vacuum modified atmosphere packaging

- Packaging in oxygen free atmosphere
- Oxygen atmosphere analysis for each cycle/ packet
- Packaging in ALU PVC bags
- Isolation of container
- Capacity range from 0,7 m³ up to 8 m³
- Clean room installation

Vacuum Modified Atmosphere Packing System

Model: **VKN-3780**

Internal dimensions: **1400 x 2000 x 1350 mm (WxHxD)**

Volume: **3.7 m³**

Parts in contact with product: **AISI 316**

Automation: **Siemens**

Vacuum pump capacity: **500 m³/h**

Ultimate oxygen concentration: **Lower than 0.2 % O₂**

Bag sealer

Welding sides: **2**

Welding stripes length: **1200 mm**

No. of parallel welds: **2**



Container Vacuum modified Atmosphere packing system

Model: **VKN-8000**

Interior dimensions: **1800 x 2700 x 1700 mm (WxHxD)**

Volume: **8 m³**

Parts in contact with product: **AISI 316**

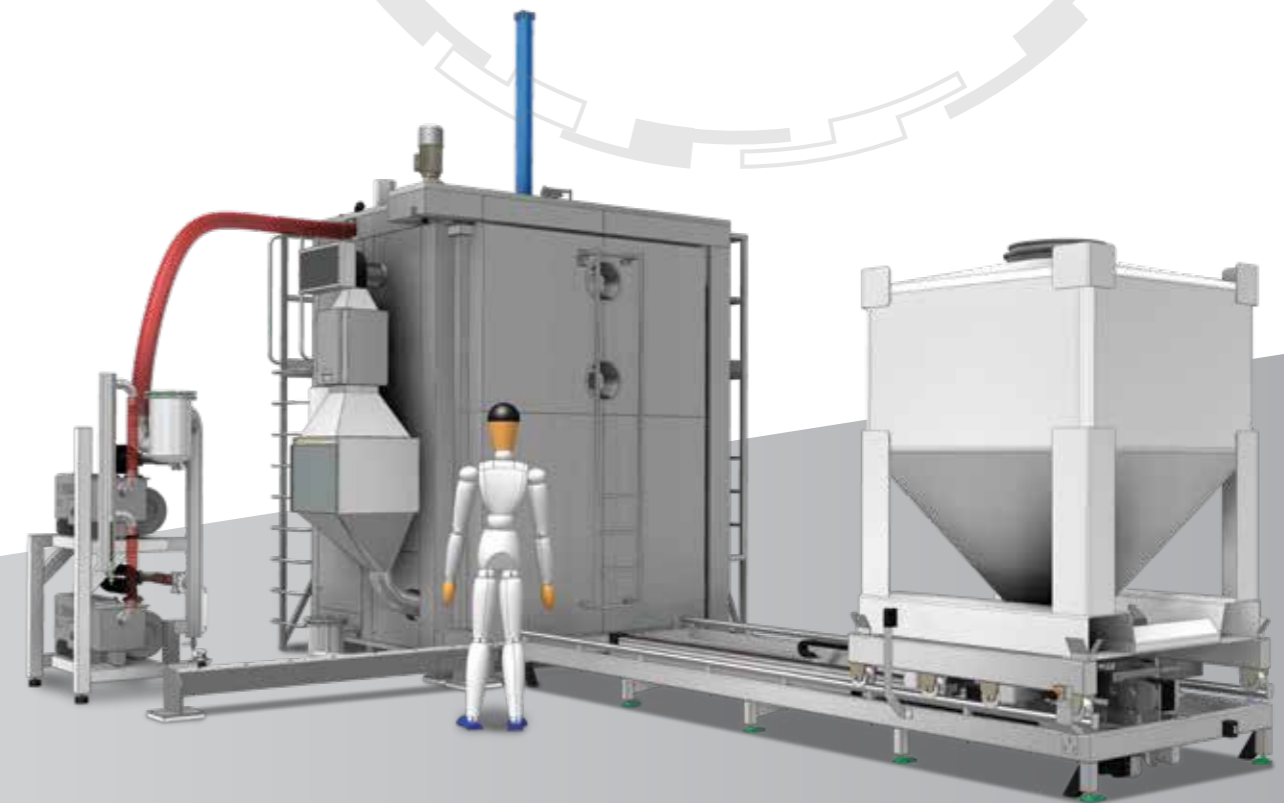
Automatization: **Siemens**

Vacuum pump capacity: **500 m³/h**

Ultimate oxygen concentration: **Lower than 0,2 % O₂**

Container sizes: **400 L, 500 L, 800 L, 2400 L**

Clean and dry: **CIP**





Tailored Equipment

Lab Coil Coating Curing Oven

Model: **LSP-140 C**

- Designed to assist in industrial processes of COIL COATING and HOT AIR CYCLE in lab environment
- Constant fresh air supply in safety function
- Door latch with an auto open feature in case of overpressure in chamber
- Single-handed operation door
- Rotating pin point shelf in chamber
- Extra-large digital countdown timer display
- Superior heat insulated doors and housing



Recirculating Cooling & Heating System Chiller / Process Thermostat

Model: **HS-10 DVP**

- Huge cooling capacity over full temperature range
- Rapid temperature change due to optimized fluid capacity
- Water cooled single compressor cooling system
- Large capacity circulation pump
- Fully stainless steel enclosure
- Advanced fully programmable controller
- Respectable heating capacity
- Cooling capacity even at high temperatures





Ultra-Fast Temperature Chamber for Field Use

Model: **TK-1000 CKLTUF**

- Temperature range extended from -50 °C... +180 °C
- Fast cool down rate 6°C/min (EN 60068-3-5)
- Air-cooled single-stage refrigeration system designed for tropical environment
- Single wing door for maximum accessibility
- Fully programmable user-friendly controller
- Enveloped in heavy duty container for safe transportation and field use



Pharma Compressed Air Heating System

Model: **GKZ-02**

- Designed for clean heating of pharmaceutical grade compressed air
- No air contamination through heating process (no filters required)
- All contact surfaces AISI 316 L
- Designed to be used in a clean room environment
- All contact surfaces polished to Ra < 0.5 µm
- Exterior body AISI 304
- Compact mobile design
- Max air flow: 1200 L/min



Worldwide partners & customers:

Industries

- Pharmacy
- Electronics
- Chemical
- Mechanical
- Automotive
- Aviation
- Testing facilities
- R & D institutes
- Universities
- Biotechnology
- Food

