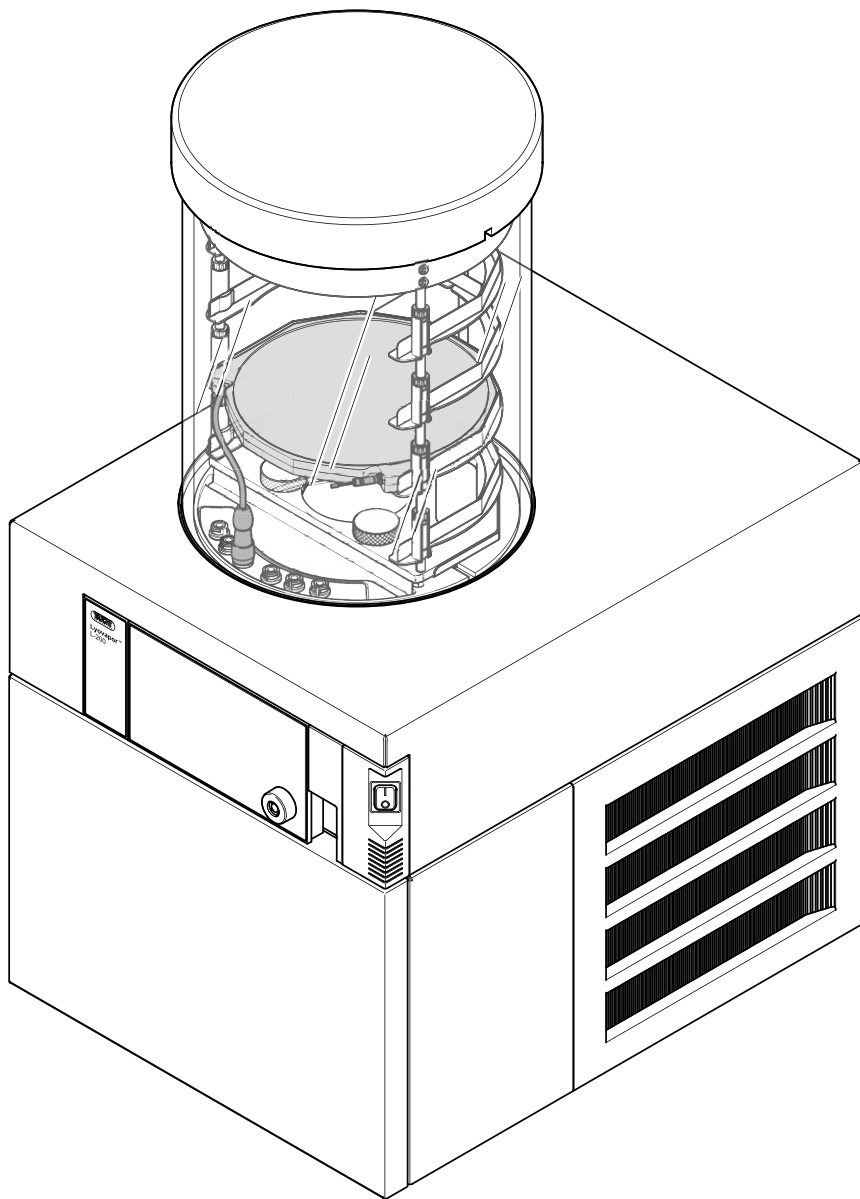




## Lyovapor™ L-200

### Technical data sheet

The compact Lyovapor™ L-200 offers high-quality Freeze Drying (-55 °C, 6 kg) with a high level of automation. Infinite-Control includes easy method creation, method running, data logging, chart recording in real time and interruption if needed at anytime - anywhere.



## Overview of Lyovapor™ L-200 Solutions

|                                    | L-200 Classic | L-200 Pro Control |
|------------------------------------|---------------|-------------------|
| Lyovapor™ L-200                    | 1             | 1                 |
| Vacuum sensor                      | 1             | 1                 |
| Main valve                         | 1             | 1                 |
| Aeration valve                     | *             | *                 |
| Regulation valve                   | *             | *                 |
| Vacuum pump Duo 6                  | *             | *                 |
| Drying chamber heateble shelf      | —             | 1                 |
| Drying chamber unheateble shelf    | 1             | 1                 |
| Drying chamber rack manifold       | 1             | 1                 |
| User interface                     | 1             | Pro               |
| Additional external vacuum sensors | —             | *                 |
| Lyovapor™ Software                 | —             | *                 |
| BUCHI Monitor App                  | 1             | 1                 |

\* Optional, according to order code

# Order code

Choose the configuration according to your needs:

## Lyovapor™ L-200 Classic

|   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |   |  |
|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|---|--|
| 1 | 1 | L | 2 | 0 | 0 | I | N |  |  |  |  |  |  |  |  | 0 |  |
|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|---|--|

Drying Chamber

- 000 Without
- 010 Manifold rack 12
- 020 Manifold rack 24
- 141 Tray 4
- 142 Tray 4 & manifold top 12
- 161 Tray 6
- 162 Tray 6 & manifold top 12

Pressure Control

- 1 Vacuum control
- 2 Advanced vacuum control

Sample temperature sensor

- 0 Without sensor

Software

- 0 Without software

Vacuum pump

- 0 Without vacuum pump
- 1 Vacuum pump "Pfeiffer Duo 6"

Trolley

- 0 Without
- 1 Convenient mobile trolley

Voltage/Frequency

- 1 220 – 240 V (50 Hz)
- 2 208 – 230 V (60 Hz)

# Order code

Choose the configuration according to your needs:

## Lyovapor™ L-200 Pro Control

|   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |   |  |
|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|---|--|
| 1 | 1 | L | 2 | 0 | 0 | P | H |  |  |  |  |  |  |  |  | 0 |  |
|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|---|--|

Drying Chamber

000

Without

241

Heated shelves 4

242

Heated shelves 4 & manifold top 12

243

Heated shelves 4 & stoppering top

261

Heated shelves 6

262

Heated shelves 6 & manifold top 12

Pressure control

1

Vacuum control

2

Advanced vacuum control

Sample temperature sensor

0

Without sensor

1

Sensor (quantity according to shelf amount)

Software

0

Without software

1

Software

Vacuum Pump

0

Without vacuum pump

1

Vacuum pump "Pfeiffer Duo 6"

Trolley

0

Without

1

Convenient mobile trolley

Voltage/Frequency

1

220 – 240 V (50 Hz)

2

208 – 230 V (60 Hz)

## Scope of delivery of Lyovapor™ L-200

All configurations are delivered ready to use and are complete of:

| Components               | Lyovapor™ L-200 |
|--------------------------|-----------------|
| Lyovapor™ L-200          | 1               |
| Power cable              | 1               |
| Vacuum hose              | 1               |
| Vacuum connection cross  | 1*              |
| Vacuum connection elbow  | 2*              |
| Main valve               | 1               |
| Regulation valve         | 1*              |
| Pressure sensor          | 1               |
| Aeration valve           | 1*              |
| Vacuum sealing ISO-KF 16 | 5               |
| Vacuum clamp ISO-KF 16   | 5               |
| Vacuum sealing ISO-KF 25 | 3               |
| Vacuum clamp ISO-KF 25   | 3               |
| O-Ring Ø 300 mm          | 2               |
| Vacuum flange adapter    | 1               |
| Operation Manual         | 1               |
| Technical Data Sheet     | 1               |

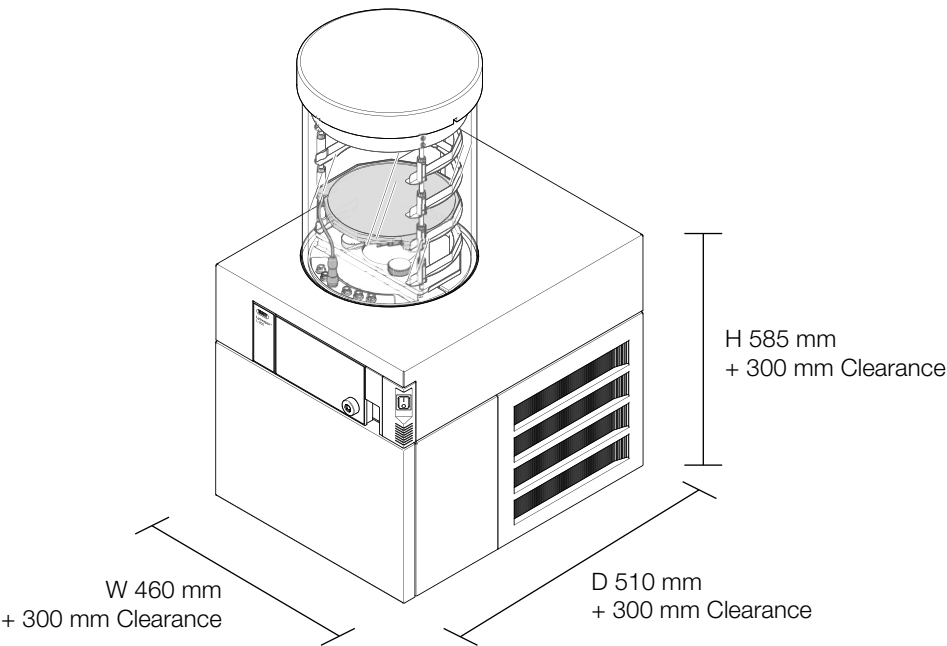
\* Optional, according to order code

## Technical data

|                                     |   |
|-------------------------------------|---|
| Dimensions (W × H × D)              | 460 × 585 × 510 mm  |
| Weight                              | 75 kg   |
| Minimum clearance on all sides      | 300 mm  |
| Connection voltage                  | 220 – 240 VAC   |
| Power consumption                   | 1200 W  |
| Fuse                                | 10 A / 250 V  |
| Frequency                           | 50 Hz / 60 Hz   |
| Environmental condition             | For indoor use only   |
| – Temperature                       | 15 – 30 °C (25 °C)  |
| – Altitude                          | Up to 2000 m  |
| – Humidity                          | Maximum relative humidity 80 % for temperatures up to 30 °C |
| Overvoltage category                | II  |
| Degree of protection                | IP21  |
| Pollution degree                    | 2   |
| Condenser power                     | ≥ 4 kg / 24 h   |
| Lowest condenser temperature        | -55 °C  |
| Temperature uniformity              | ± 1.0 °C  |
| Maximum condenser capacity          | ≤ 6 kg  |
| Condenser surface area              | 1410 cm <sup>2</sup>  |
| Number of compressors               | 1   |
| System refrigerant                  | R507 CFC free   |
| Amount of refrigerant               | 485 g   |
| Vacuum time to 0.1 mbar*            | Typ. ≤ 10 min   |
| Volume-based leak rate*             | Typ. ≤ 0.001 mbar × L / sec                                 |
| Lowest system vacuum*               | Typ. ≤ 30 mTorr   |
| Vacuum level control range*         | 50 to 500 mTorr   |
| Shelf heating range                 | Up to 60 °C   |
| Shelf temperature control tolerance | ± 1.0 °C  |

\* Vacuum pump “Pfeiffer Duo 6”

Installation requirements



Power supply

|                    |               |
|--------------------|---------------|
| Connection voltage | 220 – 240 VAC |
| Power consumption  | 1200 W        |
| Fuse               | 10 A / 250 V  |
| Frequency          | 50 Hz / 60 Hz |

Pump requirements

|                                  |                        |
|----------------------------------|------------------------|
| Connecting voltage               | 180 – 265 V            |
| End pressure with gas ballast    | $3 \times 10^{-3}$ hPa |
| End pressure without gas ballast | $3 \times 10^{-3}$ hPa |
| Absorption capacity 50 Hz        | 5 m <sup>3</sup> / h   |
| Absorption capacity 60 Hz        | 6 m <sup>3</sup> / h   |
| Maximum power consumption        | 550 W                  |

## Drying chamber bundles

| Drying chamber manifold   | Order number |
|---|--------------|
| Drying rack manifold 12, complete<br>with 12 manifold valves and baseplate, for L-200 and L-300 | 11DCIN01000  |
| Drying rack manifold 24, complete<br>with 24 manifold valves and baseplate, for L-200 and L-300 | 11DCIN02000  |
| Drying rack manifold 36, complete<br>with 36 manifold valves and baseplate, for L-200 and L-300 | 11DCIN03000  |

| Drying chamber nonheatable shelves  | Order number |
|---|--------------|
| Drying chamber 4 shelves, complete<br>with top cover and 4 shelves  | 11DCIN14100  |
| Drying chamber manifold, 4 shelves, complete<br>with top cover manifold, 4 shelves and 12 manifold valves | 11DCIN14200  |
| Drying chamber 6 shelves, complete<br>with top cover and 6 shelves  | 11DCIN16100  |
| Drying chamber manifold, 6 shelves, complete<br>with top cover manifold, 6 shelves and 12 manifold valves | 11DCIN16200  |

| Drying chamber heatable shelves  | Order number |
|--|--------------|
| Drying chamber 4 heatable shelves, complete<br>with top cover, 4 heatable shelves and 4 sample temperature sensors                                     | 11DCPH24110  |
| Drying chamber manifold, 4 heatable shelves, comp.<br>with top cover manifold, 4 heatable shelves, 12 manifold valves and 4 sample temperature sensors | 11DCPH24210  |
| Drying chamber stoppering, 4 heat. shelves, comp.<br>with top cover stoppering, 4 heatable shelves and 4 sample temperature sensors                    | 11DCPH24310  |
| Drying chamber 6 heatable shelves, complete<br>with top cover, 6 heatable shelves and 6 sample temperature sensors                                     | 11DCPH26110  |
| Drying chamber manifold, 6 heatable shelves, comp.<br>with top cover manifold, 6 heatable shelves, 12 manifold valves and 6 sample temperature sensors | 11DCPH26210  |
| Drying chamber stoppering, 6 heat. shelves, comp.<br>with top cover stoppering, 6 heatable shelves and 6 sample temperature sensors                    | 11DCPH26310  |



## Accessories

| Drying chambers  | Order number |
|--|--------------|
| Drying chamber tube, PMMA, L 350 mm, D 300 mm          | 11063278     |
| Drying chamber tube, PMMA, L 480 mm, D 300 mm          | 11065093     |
| Top cover, PMMA, D 300 mm                              | 11062912     |
| Top cover manifold, PMMA, with 12 valves, D 300 mm     | 11065595     |
| Top cover stoppering, complete, D 300 mm               | 11064314     |
| Rack, for 4 shelves, complete                          | 11065102     |
| Rack, for 6 shelves, complete                          | 11065103     |
| Support for rack, stainless steal                      | 11063789     |
| Nonheatable Shelf, stainless steel                     | 11065115     |
| Heatable shelf, aluminum coated, with connection cable | 11064095     |
| Sample tray, stainless steal, D 220 mm                 | 11061439     |
| Drying rack manifold, stainless steal, with 12 valves  | 11063664     |
| Baseplate, stainless steel, for manifold rack          | 11064953     |
| Baseplate, PMMA, for manifold rack                     | 11065733     |
| Manifold valve, comp, natural ruber, with SJ 29/32     | 11062300     |

| Sensors                                       | Order number |
|---|--------------|
| Sample temperature sensor PT1000              | 11064031     |
| Pirani / piezo pressure sensor, with cable    | 11062228     |
| Pirani pressure sensor                        | 11062229     |
| Capacitive pressure sensor                    | 11062230     |
| Cable for pressure sensor Pirani 11062229     | 11064728     |
| Cable for pressure sensor capacitive 11062230 | 11064729     |

| Vacuum  | Order number |
|---|--------------|
| Main valve L-200, with cable                            | 11062223     |
| Aeration valve L-200, with cable                        | 11064724     |
| Regulation valve L-200, with cable                      | 11064725     |
| Vacuum clamp KF 16                                      | 11064939     |
| Vacuum clamp KF 25                                      | 11063662     |
| Vacuum clamp, stainless steal, KF 40                    | 11063663     |
| Vacuum connection cross, stainless steel, KF 16 / KF 25 | 11064256     |
| Vacuum connection elbow, stainless steel, KF 16, 90 °   | 11064257     |
| Vacuum flange adapter, stainless steel, KF 16 to KF 25  | 11064870     |

| Electronics                       | Order number |
|-----------------------------------|--------------|
| User interface L-200              | 11063580     |
| User interface L-200 Pro          | 11063581     |
| SD-Card 1 GB                      | 11064730     |
| Lyovapor™ software DVD            | 11065667     |
| Connection cable, for vaccum pump | 11064934     |

| Various                               | Order number |
|---------------------------------------|--------------|
| Trolley L-200, stainless steal coated | 11063692     |

## Spare parts

|   | Order number |
|---|--------------|
| O-Ring, Silicone, 278.44x6.99                         | 11063461     |
| Sealing, FKM, KF 16, center ring                      | 11063455     |
| Sealing, FKM, KF 25, center ring                      | 11063457     |
| Sealing, FKM, KF 25, outer ring                       | 11063458     |
| Vacuum hose, PVC, with steal spiral, KF 25, L 1000 mm | 11063485     |
| Blind flange, stainless steel, KF 16                  | 11064902     |
| Blind flange, stainless steal, KF 25                  | 11063660     |