

Technical data sheet

Lyovapor™ L-210 Basic / L-210 Pro

The Lyovapor™ L-210 Basic / L-210 Pro with EcoStream™ technology offers high freeze drying performance ($-55\text{ }^{\circ}\text{C}$, $\leq 6\text{ kg}$) at low global warming potential and process time optimization by endpoint determination. Infinite Control™ allows easy method creation, data logging, chart recording in real-time and interrupting if needed at anytime - anywhere.



Scope of delivery

All configurations are supplied ready to use.



NOTE

The scope of delivery depends on the configuration of the purchase order.

Accessories are delivered as per the purchase order, order confirmation, and delivery note.

| Components | Lyovapor™ L-210 |
|---|-----------------|
| Lyovapor™ L-210 Basic or Lyovapor™ L-210 Pro | 1 |
| Power cord | 1 |
| Operation Manual | 1 |
| Technical data sheet | 1 |
| Vacuum clamp, ISO-KF 16 | 1 |
| Vacuum clamps, ISO-KF 25 | 1 |
| O-ring, 300 mm | 1 |
| Blind flange, ISO-KF 16 | 1 |
| Blind flange, ISO-KF 25 | 1 |

Order code

Choose the configuration according to your needs:

L-210 Basic bundle

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|------------------------|
| 1 | 1 | L | 2 | 1 | 0 | I | N | 0 | 0 | 0 | 0 | L-210 Basic |
| 1 | 1 | L | 2 | 1 | 0 | I | N | 1 | 0 | 0 | 0 | L-210 Basic Defrosting |

Vacuum control¹

| | | | | | | | | |
|---|---|---|---|---|---|---|---|--|
| 1 | 1 | 0 | 8 | 0 | 1 | 6 | 1 | No vacuum control (only for manifold drying chambers) |
| 1 | 1 | 0 | 8 | 0 | 1 | 6 | 2 | Advanced vacuum control |

Drying chamber¹

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | D | C | I | N | 0 | 1 | 0 | 0 | 0 | Drying rack manifold 12 |
| 1 | 1 | D | C | I | N | 0 | 2 | 0 | 0 | 0 | Drying rack manifold 24 |
| 1 | 1 | D | C | I | N | 1 | 4 | 1 | 0 | 0 | Drying chamber 4 shelves |
| 1 | 1 | D | C | I | N | 1 | 4 | 2 | 0 | 0 | Drying chamber 4 shelves with top cover manifold |
| 1 | 1 | D | C | I | N | 1 | 4 | 3 | 0 | 0 | Drying chamber 4 shelves with stoppering |
| 1 | 1 | D | C | I | N | 1 | 6 | 1 | 0 | 0 | Drying chamber 6 shelves |
| 1 | 1 | D | C | I | N | 1 | 6 | 2 | 0 | 0 | Drying chamber 6 shelves with top cover manifold |

Optional

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0 | 8 | 4 | 7 | 9 | 2 | Vacuum pump Edwards RV5 |
| 1 | 1 | 0 | 6 | 8 | 1 | 5 | 8 | Vacuum pump Edwards nXDS6iC |
| 1 | 1 | 0 | 8 | 0 | 4 | 4 | 0 | Trolley |
| 1 | 1 | 0 | 7 | 6 | 7 | 2 | 0 | Upgrade Basic to Pro instrument |
| 1 | 1 | 0 | 8 | 0 | 7 | 7 | 0 | Set for pressure difference test for drying rack manifold 12 |

¹ Selection of one option is required

L-210 Pro bundle

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|----------------------|
| 1 | 1 | L | 2 | 1 | 0 | P | H | 0 | 0 | 0 | 0 | L-210 Pro |
| 1 | 1 | L | 2 | 1 | 0 | P | H | 1 | 0 | 0 | 0 | L-210 Pro Defrosting |

Vacuum control¹

| | | | | | | | | |
|---|---|---|---|---|---|---|---|-------------------------|
| 1 | 1 | 0 | 8 | 0 | 1 | 6 | 2 | Advanced vacuum control |
|---|---|---|---|---|---|---|---|-------------------------|

Drying chamber¹

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | D | C | I | N | 0 | 1 | 0 | 0 | 0 | Drying rack manifold 12 |
| 1 | 1 | D | C | P | H | 2 | 4 | 1 | 0 | 0 | Drying chamber 4 heatable shelves |
| 1 | 1 | D | C | P | H | 2 | 4 | 1 | 0 | 1 | Drying chamber 4 heatable shelves with pressure difference test |
| 1 | 1 | D | C | P | H | 2 | 4 | 2 | 0 | 0 | Drying chamber 4 heatable shelves with top cover manifold |
| 1 | 1 | D | C | P | H | 2 | 4 | 3 | 0 | 0 | Drying chamber 4 heatable shelves with stoppering |
| 1 | 1 | D | C | P | H | 2 | 4 | 3 | 0 | 1 | Drying chamber 4 heatable shelves with pressure difference test, stoppering |
| 1 | 1 | D | C | P | H | 2 | 6 | 1 | 0 | 0 | Drying chamber 6 heatable shelves |
| 1 | 1 | D | C | P | H | 2 | 6 | 1 | 0 | 1 | Drying chamber 6 heatable shelves with pressure difference test |
| 1 | 1 | D | C | P | H | 2 | 6 | 2 | 0 | 0 | Drying chamber 6 heatable shelves with top cover manifold |

Optional

| | | | | | | | | |
|---|---|---|---|---|---|---|---|--|
| 1 | 1 | 0 | 6 | 4 | 0 | 3 | 1 | Sample temperature sensor |
| 1 | 1 | 0 | 6 | 5 | 6 | 6 | 8 | Lyovapor™ software license |
| 1 | 1 | 0 | 8 | 4 | 7 | 9 | 2 | Vacuum pump Edwards RV5 |
| 1 | 1 | 0 | 6 | 8 | 1 | 5 | 8 | Vacuum pump Edwards nXDS6iC |
| 1 | 1 | 0 | 8 | 0 | 4 | 4 | 0 | Trolley |
| 1 | 1 | 0 | 8 | 0 | 7 | 7 | 0 | Set for pressure difference test for drying rack manifold 12 |

¹ Selection of one option is required

Technical data

Lyovapor™ L-210 Basic/L-210 Pro

| Specification | L-210 Basic | L-210 Pro |
|---|-----------------------|-----------------------|
| Dimensions without drying attachments (W x D x H) | 503 x 645 x 510 mm | 503 x 645 x 510 mm |
| Weight | 65.6 kg | 67.4 kg |
| Minimum clearance on all sides | 300 mm | 300 mm |
| Connection voltage | 200 – 240 VAC ±10% | 200 – 240 VAC ±10% |
| Rated power consumption | 1,300 VA | 1,800 VA |
| Fuse | 10 A | 10 A |
| Frequency | 50 / 60 Hz | 50 / 60 Hz |
| Overvoltage category | II | II |
| Protection rating | IP20 | IP20 |
| Pollution degree | 2 | 2 |
| Condensing capacity | 6 kg / 24 h | 6 kg / 24 h |
| Lowest condenser temperature | -55 °C | -55 °C |
| Temperature divergence | ±1.0 °C | ±1.0 °C |
| Condenser capacity | ≤ 6 kg | ≤ 6 kg |
| Condenser surface area | 1,524 cm ² | 1,524 cm ² |
| Refrigerants | R290, R600, R170 | R290, R600, R170 |
| Refrigerant quantity | < 100 g | < 100 g |
| Vacuum generation time to 0.1 mbar | Typically ≤ 10 min | Typically ≤ 10 min |
| Volume-based leakage rate | < 10 mbar L/h | < 10 mbar L/h |
| Lowest system vacuum | 0.03 mbar | 0.03 mbar |
| Control range vacuum | 0.1 – 1 mbar | 0.1 – 1 mbar |
| Shelf heating setting | - | max. 60 °C |
| Shelf heating tolerance | - | ±1.0 °C |
| Certificates | CE/CSA/CB | CE/CSA/CB |
| Drying attachments operating height | 1,100 mm | 1,100 mm |
| Noise emission to DIN 45635 (without vacuum pump) | < 60 dB(A) | < 60 dB(A) |
| Inert gas connection (relative) | 0.5 bar | 0.5 bar |
| Marking on type plate | Bas / BasD | Pro / ProD |
| Defrosting (optional, D on type plate) | Yes | Yes |
| Condenser temperature during defrosting | max. 60 °C | max. 60 °C |

Ambient conditions

For indoor use only.

| | |
|-------------------------------|-----------------------------------|
| Max. altitude above sea level | 2'000 m |
| Ambient temperature | 5 - 30 °C ¹ |
| Maximum relative humidity | 80 % for temperatures up to 30 °C |
| Storage temperature | max. 70 °C |

Drying chamber bundles

| Drying rack manifold | Order no. |
|--|-------------|
| Drying rack manifold 12 with 12 manifold valves and baseplate | 11DCIN01000 |
| Drying rack manifold 24 with 24 manifold valves and baseplate | 11DCIN02000 |

| Drying chamber non-heatable shelves | Order no. |
|--|-------------|
| Drying chamber 4 shelves with top cover, support ring and 4 non-heatable shelves | 11DCIN14100 |
| Drying chamber manifold, 4 shelves with top cover manifold, support ring, 4 non-heatable shelves and 12 manifold valves | 11DCIN14200 |
| Drying chamber with stoppering cover, support ring and non-heatable shelves | 11DCIN14300 |
| Drying chamber 6 shelves with top cover, support ring and 6 non-heatable shelves | 11DCIN16100 |
| Drying chamber manifold, 6 shelves with top cover manifold, support ring, 6 non-heatable shelves and 12 manifold valves | 11DCIN16200 |

| Drying chamber heatable shelves | Order no. |
|---|-------------|
| Drying chamber 4 heatable shelves with top cover | 11DCPH24100 |
| Drying chamber 4 heatable shelves with top cover and pressure difference test | 11DCPH24101 |
| Drying chamber 4 heatable shelves with top cover manifold and 4 heatable shelves | 11DCPH24200 |
| Drying chamber 4 heatable shelves with stoppering cover and 4 heatable shelves | 11DCPH24300 |
| Drying chamber 4 heatable shelves with stoppering cover, 4 heatable shelves and pressure difference test | 11DCPH24301 |
| Drying chamber 6 heatable shelves with top cover and 6 heatable shelves | 11DCPH26100 |
| Drying chamber 6 heatable shelves with top cover, 6 heatable shelves and pressure difference test | 11DCPH26101 |

Drying chamber heatable shelves

Order no.

Drying chamber 6 heatable shelves
with top cover manifold and 6 heatable shelves

11DCPH26200

Spare parts and accessories

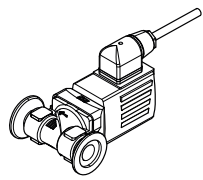
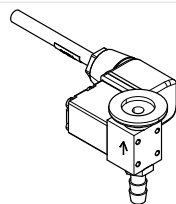
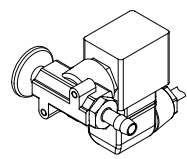
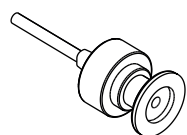


Use only genuine BUCHI consumables and spare parts in order to ensure correct, safe and reliable operation of the system.

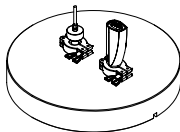
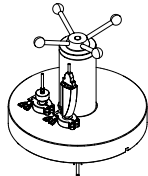
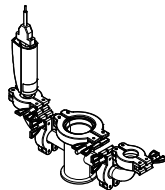
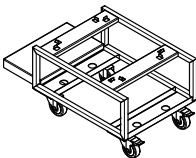
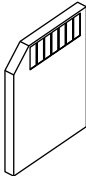
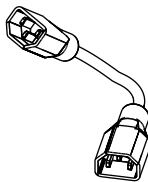


NOTE

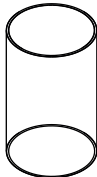
Any modifications of spare parts or assemblies are only allowed with the prior written permission of BUCHI.

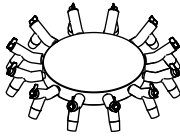
Accessories

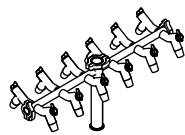
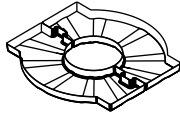
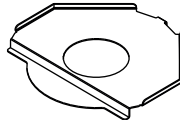
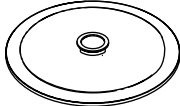
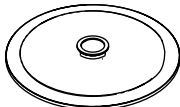
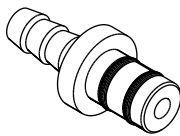
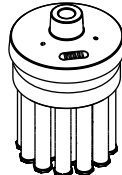
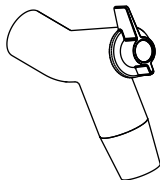
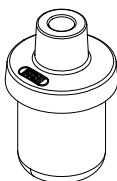
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| Main valve | 11076675 |  |
| Pressure regulation valve | 11076679 |  |
| Aeration valve | 11064724 |  |
| Pirani / Piezo pressure sensor | 11062228 |  |
| Capacitive pressure sensor Inficon CDG 020 D | 11062230 |  |
| PT1000 sample temperature sensor | 11064031 |  |


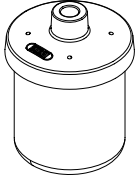
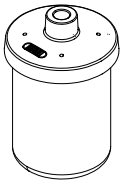
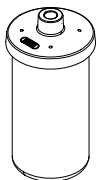

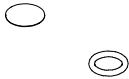
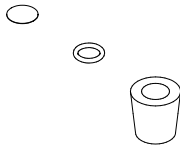
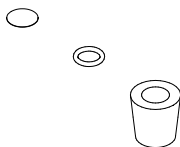
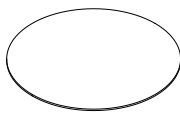
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| Set for pressure difference test incl. extension cable for PPG011 and CDG 020D sensors, PMMA top cover, seals and clamps | 11067590 |  |
| Set for pressure difference test incl. extension cable of PPG011 and CDG 020D sensors, stoppering top cover, seals and clamps | 11070102 |  |
| Set for pressure difference test Only for manifold rack steel with 12 connections | 11080770 |  |
| Trolley, stainless steel coated | 11080440 |  |
| SD-Card 1 GB | 11064730 |  |
| Connection cable, for vacuum pump | 11064934 |  |
| Vacuum pump Edwards nXDS6iC | 11068158 | |
| Vacuum pump Edwards RV5 | 11084792 | |

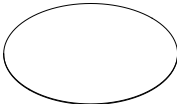
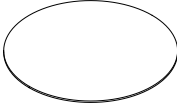
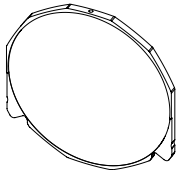
Top-mount drying rack accessories

| | Order no. | Image |
|--|-----------|---|
| Drying chamber tube, PMMA, for 4 shelves L 368 mm, Ø 300 mm | 11063278 |  |


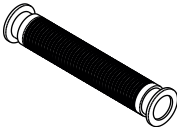
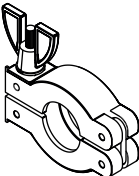
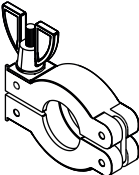
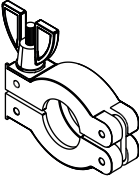
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| Drying chamber tube, PMMA, for 6 shelves L 480 mm, Ø 300 mm | 11065093 |  |
| Top cover, PMMA, without sealing Ø 300 mm, H 50 mm | 11062912 |  |
| Top cover manifold, PMMA, with 12 valves, without sealing Ø 300 mm, W 546 mm, H 127 mm | 11065595 |  |
| Top cover stoppering, without sealing only for rack for 4 heatable and non- heatable shelf Ø 300 mm, H 330 mm, W 320 mm | 11064314 |  |
| Rack for 4 heatable shelves H 356 mm, Ø 265 mm , shelf distance 30-75 mm | 11065102 |  |
| Rack for 6 heatable shelves H 468 mm, Ø 265 mm, shelf distance 30-75 mm | 11065103 |  |
| Heatable shelf, aluminum coated, with connection cable Ø 219.5 mm, surface area 376 cm ² | 11064095 |  |
| Sample tray, stainless steel Ø 220 mm, H 18.5 mm | 11061439 |  |
| Ferrule, Ø 218 mm, H 40 mm | 11065816 |  |

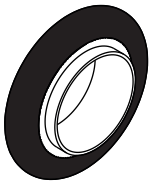
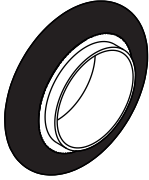

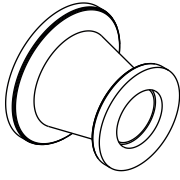
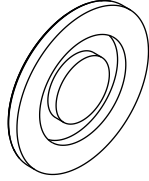
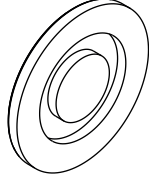
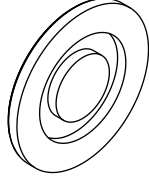
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|--|-----------|---|
| Drying rack manifold, stainless steel, with 12 valves H 340 mm, W 777 mm | 11063664 |  |
| Drip pan, for manifold | 11063358 |  |
| Support for rack, stainless steel H 4 mm | 11063789 |  |
| Baseplate, stainless steel, for manifold rack | 11064953 |  |
| Baseplate, PMMA, for manifold rack | 11065733 |  |
| Suction nipple For manifold application to create vacuum in sample flasks | 11065819 |  |
| Ampoule adapter for manifold with 19 ampoule connections and cap adapter | 11065725 |  |
| Manifold valve, EPDM/Silicone, with SJ 29/32 | 11062300 |  |
| Flask beaker for manifold 100 mL with cap adapter and integrated filter | 11066140 |  |

| | Order no. | Image |
|--|-----------|---|
| Flask beaker for manifold 200 mL with cap adapter and integrated filter | 11066141 |  |
| Flask beaker for manifold 600 mL with cap adapter and integrated filter | 11066142 |  |
| Flask beaker for manifold 800 mL with cap adapter and integrated filter | 11069474 |  |
| Flask beaker for manifold 1200 mL with cap adapter and integrated filter | 11066143 |  |
| Manifold flask filter set with o-ring, incl. filter paper | 11066144 |  |
| Manifold flask filter set with o-ring, incl. filter paper | 11067334 |  |
| Manifold flask adapter set, 24/40 joint size with 12 adapters, incl. filter paper | 11066171 |  |
| Manifold flask adapter set, 24/40 joint size with 6 adapters, incl. filter paper | 11067333 |  |
| Filter round 20mm Set à 100pcs Filter for manifold valve | 11065801 |  |

| | Order no. | Image |
|--|-----------|---|
| Filter round 47mm Set à 100pcs Beaker flasks with volume above 600 mL | 11065731 |  |
| Filter round 30mm Set à 100pcs Beaker flasks with volume below 600 mL | 11065728 |  |
| Unheatable shelf for stoppering | 11079991 |  |

Spare parts

| | Order no. | Image |
|-------------------------------|-----------|---|
| O-Ring Ø 300 mm | 11065367 |  |
| Vacuum hose, KF 25, L 1000 mm | 11066031 |  |
| Vacuum clamp KF 16 | 11064939 |  |
| Vacuum clamp ring KF 25 | 11063662 |  |
| Vacuum clamp ring KF 40 | 11063663 |  |

| | Order no. | Image |
|--|-----------|---|
| Vacuum seal KF 16 | 11063455 |  |
| Vacuum seal KF 25 | 11063457 |  |
| Vacuum seal KF 40 | 11063659 |  |
| Vacuum flange adapter, stainless steel, KF 16 to KF 25 | 11064870 |  |
| Blind flange KF 16 | 11064902 |  |
| Blind flange KF 25 | 11063660 |  |
| Blind flange KF 40 | 11063661 |  |

Wear parts

| | Order no. | Image |
|--|-----------|---|
| Tip seal kit for vacuum pump Edwards nXDS6iC | 11069617 |  |
| Seals for drain valve, PTFE | 11081336 | |

Software

| | Order no. |
|----------------------------|-----------|
| Lyovapor™ software USB | 11065667 |
| Lyovapor™ software licence | 11065668 |

IQ/OQ kits

| | Order no. |
|-----------------|-----------|
| IQ/OQ set en | 11086293 |
| Repeating OQ en | 11086294 |

Maintenance kits

| | Order no. |
|---|-----------|
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