

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 °C, ≤ 6 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	1
Lyovapor™ L-210 Pro	
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 control<sup>1</sup>

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 chamber<sup>1</sup>

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

<sup>1</sup> 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 control<sup>1</sup>

1	1	0	8	0	1	6	2	Advanced vacuum control
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### Drying chamber<sup>1</sup>

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

<sup>1</sup> 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 <sup>2</sup>	1,524 cm <sup>2</sup>
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 <sup>1</sup>
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

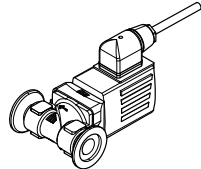
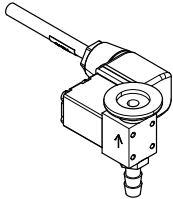
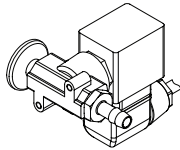
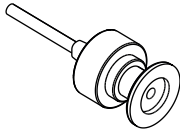


Use only genuine BUCHI consumables and spare parts in order to ensure correct, safe and reliable operation of the system.

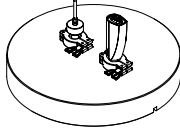
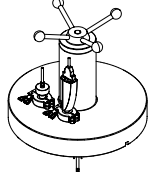
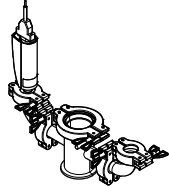
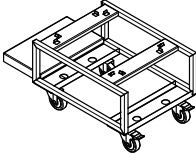
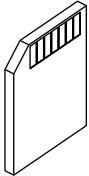
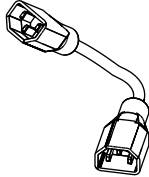


### NOTE

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

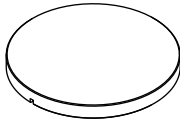
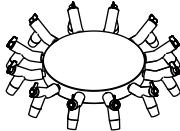
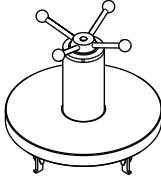

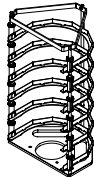
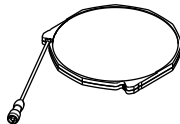
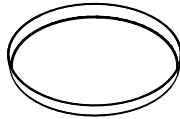
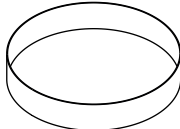
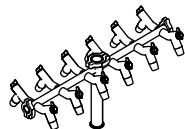
## Accessories

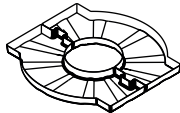
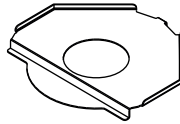
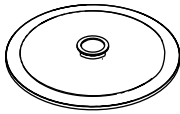
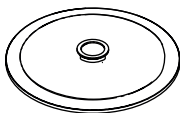
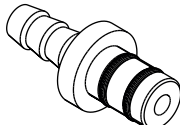
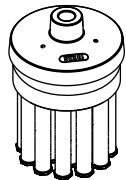
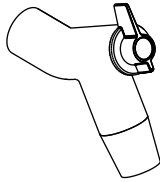

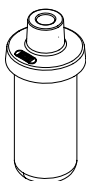
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Main valve	11076675	
Pressure regulation valve	11076679	
Aeration valve	11064724	
Pirani / Piezo pressure sensor	11062228	
Capacitive pressure sensor Inficon CDG 020 D	11062230	
PT1000 sample temperature sensor	11064031	

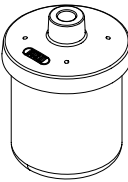

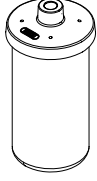
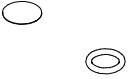
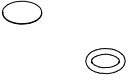
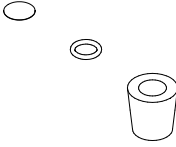
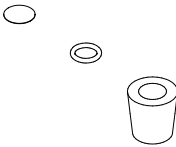
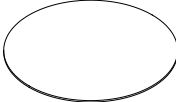

	Order no.	Image
Set for pressure difference test incl. extension cable for PPG011 and CDG 020D sensors, PMMA top cover, seals and clamps	11067590	
Set for pressure difference test incl. extension cable of PPG011 and CDG 020D sensors, stoppering top cover, seals and clamps	11070102	
Set for pressure difference 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	

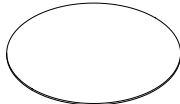
## Top-mount drying rack accessories

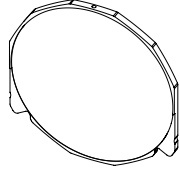
	Order no.	Image
Drying chamber tube, PMMA, for 4 shelves L 368 mm, Ø 300 mm	11063278	
Drying chamber tube, PMMA, for 6 shelves L 480 mm, Ø 300 mm	11065093	

	Order no.	Image
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 cm²	11064095	
Sample tray, stainless steel Ø 220 mm, H 18.5 mm	11061439	
Ferrule, Ø 218 mm, H 40 mm	11065816	
Drying rack manifold, stainless steel, with 12 valves H 340 mm, W 777 mm	11063664	


	Order no.	Image
Drip pan, for manifold	11066358	
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	
Flask beaker for manifold 200 mL with cap adapter and integrated filter	11066141	

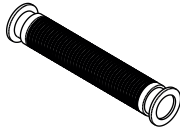
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Flask beaker for manifold 600 mL with cap adapter and integrated filter	11066142	
Flask beaker for manifold 800 mL with cap adapter and integrated filter	11069474	
Flask beaker for manifold 1200 mL with cap adapter and integrated filter	11066143	
Manifold 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	
Filter round 47mm Set à 100pcs Beaker flasks with volume above 600 mL	11065731	

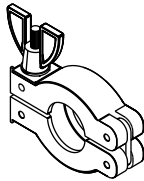
	Order no.	Image
Filter round 30mm Set à 100pcs Beaker flasks with volume below 600 mL	11065728	

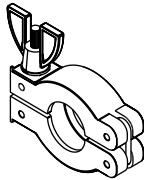
Unheatable shelf for stoppering	11079991	
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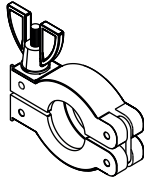
## Spare parts

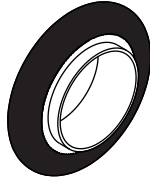
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O-Ring Ø 300 mm	11065367	

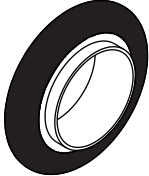
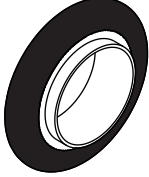
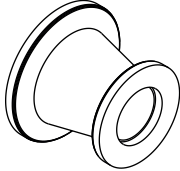
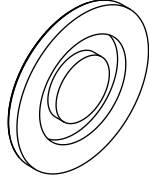
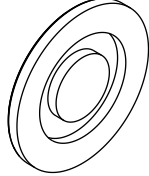
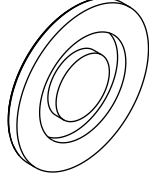
Vacuum hose, KF 25, L 1000 mm	11066031	
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Vacuum clamp KF 16	11064939	
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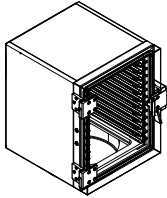
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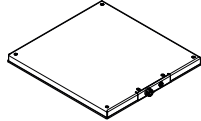
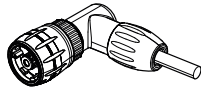
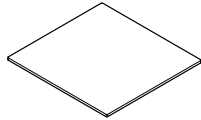
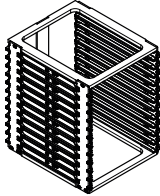
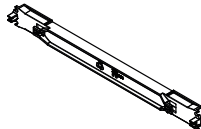
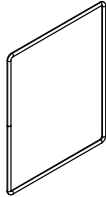
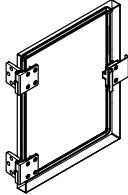
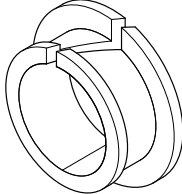
Vacuum clamp ring KF 40	11063663	
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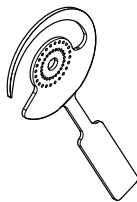
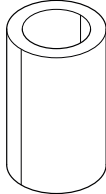
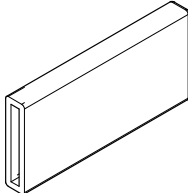
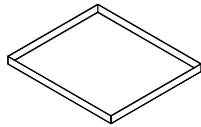
Vacuum seal KF 16	11063455	
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	Order no.	Image
Vacuum seal KF 25	11063457	
Vacuum seal KF 40	11063659	
Vacuum flange adapter, stainless steel, KF 16 to KF 25	11064870	
Blind flange KF 16	11064902	
Blind flange KF 25	11063660	
Blind flange KF 40	11063661	

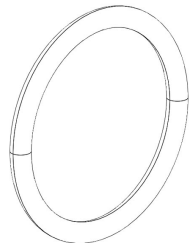
## Frontloader spare parts

	Order no.	Image
Heatable Frontloader, cpl. incl. shelves	11084813	
Unheatable Frontloader, cpl. incl. shelves	11084814	
Frontloader housing and rack only	11085197	

	Order no.	Image
Frontloader shelf, cpl.	11085186	
Cable for heatable shelves	11085205	
Drying chamber plate, unheatable	11085432	
Frontloader rack, cpl.	11085130	
Guide rails for Frontloader shelves	11085064	
Frontloader door O-ring	11080752	
Frontloader door with hinge and handle	11080817	
Frontloader clip bearing MCM-08-03	11085147	

	Order no.	Image
Frontloader turntable lock	11085148	
Frontloader spacer tube D8.2/12x20	11085154	
Frontloader handle closure	11085398	
Frontloader sample plate	11085470	

## Wear parts

	Order no.	Image
Mineral oil 1 L for vacuum pump Edwards RV5	11086495	
Maintenance kit for vacuum pump Edwards RV5	11086506	
Tip seal kit for vacuum pump Edwards nXDS6iC	11069617	
Seals for drain valve, PTFE	11081336	

## Software

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

## IQ/OQ kits

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

## Maintenance kits

	Order no.
Customer kit for L-250 / L-210, with advanced vacuum control	11076718
Frequently used wear and spare parts for self-servicing your device, conveniently gathered in one kit	
Customer kit for L-250 / L-210, with ultimate vacuum control	11076719
Frequently used wear and spare parts for self-servicing your device, conveniently gathered in one kit	



# WolfLabs

**Pricing on any accessories shown can be found by keying the part number into the search box on our website.**

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.