

## Laboratory Vacuum Systems, LVS

ILMVAC Laboratory Vacuum Systems LVS are compact pump systems for conventional vacuum distillation. Equipped with a chemical resistant diaphragm pump (see the Diaphragm Pumps section), they are the ideal solution for many applications in chemical laboratories and research. ILMVAC Laboratory Vacuum Systems are equipped with or without pressure regulation depending upon their use.

ILMVAC Laboratory Vacuum Systems are available with a wide range of features, and in various designs, which enables them to be easily adapted to a multitude of applications. Depending on their use, the pumping speed and ultimate pressure of the LVS can be changed by simply exchanging the pump, e.g. an LVS 310 Zp can be converted into an LVS 610 Tp by simply changing the diaphragm pump, and this requires no technical assistance.

Your safety is important to us: Therefore all the modules in our pump systems that come into contact with gas are made of high quality, chemically resistant components. This enables even acidic and solvent vapors to be evacuated without difficulty. All glass components are coated with a transparent shatter protection, through which the process remains visible. Since low cooling water temperatures reduce the environmental impact, all LVSs come with an insulated condenser. Other condensers are available on request.

Time is money: We would like to offer our customers optimal solutions. Therefore we have developed the design of our laboratory vacuum systems even further. Major components of the pump systems are more accessible. The diaphragm pump used can be easily detached from the base plate if necessary. This makes maintenance and service work quick and easy.

Systematic environmental protection: Almost 100% solvent recovery, oil-free vacuum, and a long life make our laboratory vacuum systems excellent economical and ecological laboratory vacuum generators.

### Ranges of application:

- vacuum distillation
- laser technology
- packaging industry
- environmental technology
- vacuum concentrators

### External operating pad:

All controlled LVSs can be equipped with an operating pad separate from the device. Subsequent retrofitting with an operating pad is also possible.



### Special characteristics

- dry-running, chemical resistant diaphragm vacuum pump system
- compact design, all essential components are installed onto the pump carrier
- quick and easy maintenance ensured by the good accessibility of the diaphragm pump
- practical, preconfigured pump types
- user-friendly operation
- low vibration
- almost 100% solvent recovery

modular design:  
therefore most flexible configuration  
by simply exchanging the pump



external operating pad



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## Laboratory Vacuum Systems

### LVS standard

### Ultimate Pressure 8 or 2 mbar

ILMVAC Laboratory Vacuum Systems are equipped with or without pressure regulation depending upon their use. The pressure regulation is implemented in the standard version by a chemical-resistant solenoid valve. The operation of the controller has been intentionally simplified, and it is easy to learn. Visualization and settings can be made from a PC.

## Laboratory Vacuum Systems LVS standard for One Unregulated Connection

This laboratory vacuum systems have a modular design.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side separator with round-bottom flask 500 ml
- assembled and wired ready for connection
- one unregulated connection
- suction connection DN 8 for hose inner diameter 8 mm



## Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz m³/h	l/min	Dim. (W/D/H) mm	Weight kg
LVS 300 Zp	< 8	2.3/2.5	38/42	360/310/395	16.1
LVS 600 Tp	< 2	4.5/4.9	75/82	360/310/395	23.2



## Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 300 Zp	230 / 50/60	yes	1	113041
LVS 300 Zp	115 / 50/60	yes	1	113041-03
LVS 600 Tp	230 / 50/60	yes	1	113051
LVS 600 Tp	115 / 50/60	yes	1	113051-03

Note:  
Country specific  
mains connection  
cable separately  
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## Laboratory Vacuum Systems LVS standard with One Unregulated Connection

Economically and pollution free. These laboratory vacuum systems are additionally equipped with an insulated emission condenser apart from the configuration with chemically resistant diaphragm pump and separator. This condenser recovers solvents, which are collected in the separator. A contamination of laboratory air is excluded to a large extent by this configuration. These systems find a broad application everywhere, where vapors or gases must be evacuated economically and environmentally friendly.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- suction-side separator with round-bottomed flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- one unregulated connection
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm



### Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz		Dim. (W/D/H) mm	Weight kg
		m <sup>3</sup> /h	l/min		
LVS 101 Zp	< 8	1.0/1.1	17/18	360/310/445	11.6
LVS 301 Zp	< 8	2.3/2.5	38/42	360/310/445	16.3
LVS 201 Tp	< 2	1.8/2.0	30/33	360/310/445	15.0
LVS 601 Tp	< 2	4.5/4.9	75/82	360/310/445	23.5



### Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 101 Zp	230 / 50/60	yes	1	113022
LVS 101 Zp	115 / 50/60	yes	1	113022-03
LVS 301 Zp	230 / 50/60	yes	1	113042
LVS 301 Zp	115 / 50/60	yes	1	113042-03
LVS 201 Tp	230 / 50/60	yes	1	113032
LVS 201 Tp	115 / 50/60	yes	1	113032-03
LVS 601 Tp	230 / 50/60	yes	1	113052
LVS 601 Tp	115 / 50/60	yes	1	113052-03



Note:  
Country specific  
mains connection  
cable separately  
to the device, see  
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## Laboratory Vacuum Systems LVS standard for Two Unregulated Connections

The two unregulated connections provide the systems to run two applications simultaneously. A suction side separator provides protection of the chemically resistant vacuum pump. The pressure-side insulated emission condenser provides environmentally friendly operation by recovering and collecting the solvent residues.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- two unregulated connections
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm



### Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz		Dim. (W/D/H) mm	Weight kg
		m <sup>3</sup> /h	l/min		
LVS 302 Zp	< 8	2.3/2.5	38/42	360/310/445	16.3
LVS 602 Tp	< 2	4.5/4.9	75/82	360/310/445	23.5



### Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 302 Zp	230 / 50/60	yes	1	113043
LVS 302 Tp	115 / 50/60	yes	1	113043-03
LVS 602 Tp	230 / 50/60	yes	1	113053
LVS 602 Zp	115 / 50/60	yes	1	113053-03

Note:  
Country specific  
mains connection  
cable separately  
to the device, see  
page 146.



## Laboratory Vacuum Systems LVS standard for One Regulated Connection

These laboratory vacuum systems provide precisely controlled vacuum processes. The system is equipped with a digital vacuum controller, which holds and controls the pressure within a set range. A suction-side separator protects the vacuum pump by holding back particles and drops of fluid. The pressure-side insulated emission condenser provides environmentally friendly operation by recovering and collecting the solvent residues.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- controller with sensor and venting valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- one regulated connection
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm



### Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz		Dim. (W/D/H) mm	Weight kg
		m <sup>3</sup> /h	l/min		
LVS 110 Zp	< 8	1.0/1.1	17/18	360/310/445	11.7
LVS 310 Zp	< 8	2.3/2.5	38/42	360/310/445	17.8
LVS 210 Tp	< 2	1.8/2.0	30/33	360/310/445	15.7
LVS 610 Tp	< 2	4.5/4.9	75/82	360/310/445	24.7
LVS 1210 Tp	< 2	8.3/9.1	138/152	540/310/445	36.3



### Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 110 Zp	230 / 50/60	yes	1	113024
LVS 110 Zp	115 / 50/60	yes	1	113024-03
LVS 310 Zp	230 / 50/60	yes	1	113044
LVS 310 Zp	115 / 50/60	yes	1	113044-03
LVS 210 Tp	230 / 50/60	yes	1	113034
LVS 210 Tp	115 / 50/60	yes	1	113034-03
LVS 610 Tp	230 / 50/60	yes	1	113054
LVS 610 Tp	115 / 50/60	yes	1	113054-03
LVS 1210 Tp	230 / 50/60	yes	1	113064
LVS 1210 Tp	115 / 60	yes	1	113064-03



Note:  
Country specific  
mains connection  
cable separately  
to the device, see  
page 146.

## Laboratory Vacuum Systems LVS standard for One Regulated and One Unregulated Connection

These systems provide the simultaneous operation of a regulated and a non-regulated vacuum application. A suction-side separator protects the vacuum pump by holding back particles and drops of fluid. The pressure-side insulated emission condenser provides environmentally compatible operation by recovering and collecting the solvent residues.

With an additional VCB 424 cv vacuum control box (see chapter Measurement and Control) the non-regulated connection can simply be transformed into a regulated one.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- controller with sensor, venting valve and check valves
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- one regulated and one unregulated connection
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm



### Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz		Dim. (W/D/H) mm	Weight kg
		m <sup>3</sup> /h	l/min		
LVS 311 Zp	< 8	2.3/2.5	38/42	360/310/445	18.1
LVS 611 Tp	< 2	4.5/4.9	75/82	360/310/445	25.0



### Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 311 Zp	230 / 50/60	yes	1	113045
LVS 311 Zp	115 / 50/60	yes	1	113045-03
LVS 611 Tp	230 / 50/60	yes	1	113055
LVS 611 Tp	115 / 50/60	yes	1	113055-03

Note:  
Country specific  
mains connection  
cable separately  
to the device, see  
page 146.

## Laboratory Vacuum Systems LVS standard for Two Regulated Connections

These systems provide the precise and simultaneous operation of two regulated vacuum applications. The systems are equipped with a digital vacuum controller, which holds and controls the pressure within a set range. A suction-side separator protects the vacuum pump by holding back particles and drops of fluid. The pressure-side insulated emission condenser provides environmentally compatible operation by recovering and collecting the solvent residues.

### Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- controller with sensor and venting valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- two regulated connections with check valves
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm



### Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz		Dim. (W/D/H) mm	Weight kg
		m <sup>3</sup> /h	l/min		
LVS 320 Zp	< 8	2.3/2.5	38/40	360/310/445	18.5
LVS 620 Tp	< 2	4.5/4.9	75/82	360/310/445	25.3



### Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 320 Zp	230 / 50/60	yes	1	113046
LVS 320 Zp	115 / 50/60	yes	1	113046-01
LVS 620 Tp	230 / 50/60	yes	1	113056
LVS 620 Tp	115 / 50/60	yes	1	113056-01

Note:  
Country specific  
mains connection  
cable separately  
to the device, see  
page 146.



## Laboratory Vacuum Systems LVS economic

ILMVAC laboratory vacuum systems economic are equipped with a vacuum controller and an intelligent stand-by mode. For the regulation of the pumping speed the pump is turned on or off according to the required vacuum. By a direct adjustment of the increase of pressure rate it is possible to suppress the pump to be activated. The system becomes active only if a potential consumer is connected. The economic control leads to a noticeable reduction of the operating cost without additional price.

A suction side separator provides protection for the chemically resistant vacuum pump. The pressure-side insulated emission condenser provides environmentally compatible operation by recovering and collecting the solvent residues.

### Special characteristics:

- dry-running, chemical resistant diaphragm vacuum pump system
- equipped with a vacuum controller 424
- vacuum control by stand-by mode
- continuously ready to run
- optimized operating costs
- longer life and service intervals
- programming of the controller either on board or via PC
- storage of all programming and measuring data possible
- compact design, all essential components are installed onto the pump carrier
- quick and easy maintenance ensured by the good accessibility of the diaphragm pump
- practical, preconfigured pump types
- user-friendly operation
- low vibration
- almost 100% solvent recovery



## Laboratory Vacuum Systems LVS economic Ultimate Pressure 8 or 2 mbar

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- controller with sensor and venting valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- one regulated connection
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm



### Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz		Dim. (W/D/H) mm	Weight kg
		m <sup>3</sup> /h	l/min		
LVS 110 Zp economic	< 8	1.0/1.1	17/18	360/310/445	12.9
LVS 310 Zp economic	< 8	2.3/2.5	38/42	360/310/445	17.6
LVS 210 Tp economic	< 2	1.8/2.0	30/33	360/310/445	15.7
LVS 610 Tp economic	< 2	4.5/4.9	75/82	360/310/445	24.7
LVS 1210 Tp economic	< 2	8.3/9.1	138/152	540/310/445	36.1

### Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 110 Zp economic	230 / 50/60	yes	1	113028
LVS 110 Zp economic	115 / 50/60	yes	1	113028-03
LVS 310 Zp economic	230 / 50/60	yes	1	113048
LVS 310 Zp economic	115 / 50/60	yes	1	113048-03
LVS 210 Tp economic	230 / 50/60	yes	1	113038
LVS 210 Tp economic	115 / 50/60	yes	1	113038-03
LVS 610 Tp economic	230 / 50/60	yes	1	113058
LVS 610 Tp economic	115 / 50/60	yes	1	113058-03
LVS 1210 Tp economic	230 / 50/60	yes	1	113068
LVS 1210 Tp economic	115 / 60	yes	1	113068-03



Note:  
Country specific  
mains connection  
cable separately  
to the device, see  
page 146.

## Laboratory Vacuum Systems LVS ecoflex

ILMVAC laboratory vacuum systems ecoflex are equipped with a vacuum controller 424 and a chemical-resistant diaphragm pump with appropriate speed regulation. This gives demand-oriented and precise control of the pumping speed. The vacuum processes run more efficiently and are easier to reproduce. When necessary, for example when evaporating mixed solvents, the setpoint can easily be adjusted while the process is running. As the pump works precisely at the set pressure point, the reduced energy consumption leads to significantly lower running costs. Precisely controlled vacuum also leads to lower wear on the vacuum pump, and thus to a longer life.

Independently of the quantity of gas the ecoflex system always provides the optimal pumping speed. A suction side separator provides protection for the chemically resistant vacuum pump. The pressure-side insulated emission condenser provides environmentally compatible operation by recovering and collecting the solvent residues.

### Special characteristics:

- dry-running, chemical resistant diaphragm vacuum pump system
- equipped with a VCZ 424 vacuum controller
- precise control of the pumping speed
- automatic pressure tracking is possible
- reproducible processes
- very silent operation
- increased life
- optimized operating costs
- very accurate processes
- simple programming of the controller
- visualization on the PC
- compact design, all essential components are installed onto the pump carrier
- quick and easy maintenance ensured by the good accessibility of the diaphragm pump
- practical, preconfigured pump types
- user-friendly operation
- low vibration
- almost 100% solvent recovery



## Laboratory Vacuum Systems LVS ecoflex Ultimate Pressure 8 or 2 mbar

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- controller with sensor and venting valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- one regulated connection
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm



### Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz		Dim. (W/D/H) mm	Weight kg
		m <sup>3</sup> /h	l/min		
LVS 310 Zp ecoflex	< 8	2.6	43	360/310/445	19.9
LVS 110 Tp ecoflex	< 2	1.2	20	250/260/435	9.5
LVS 210 Tp ecoflex	< 2	2.2	37	360/310/445	19.0
LVS 610 Tp ecoflex	< 2	4.9	82	360/310/445	26.8
LVS 1210 Tp ecoflex	< 2	9.1	152	540/310/445	37.1



### Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 310 Zp ecoflex	230 / 50/60	yes	1	113074
LVS 310 Zp ecoflex	115 / 50/60	yes	1	113074-03
LVS 110 Tp ecoflex	90-240 / 50/60	yes	1	113184
LVS 210 Tp ecoflex	230 / 50/60	yes	1	113124
LVS 210 Tp ecoflex	115 / 50/60	yes	1	113124-03
LVS 610 Tp ecoflex	230 / 50/60	yes	1	113084
LVS 610 Tp ecoflex	115 / 50/60	yes	1	113084-03
LVS 1210 Tp ecoflex	230 / 50/60	yes	1	113094

Note:  
Country specific  
mains connection  
cable separately  
to the device, see  
page 146.