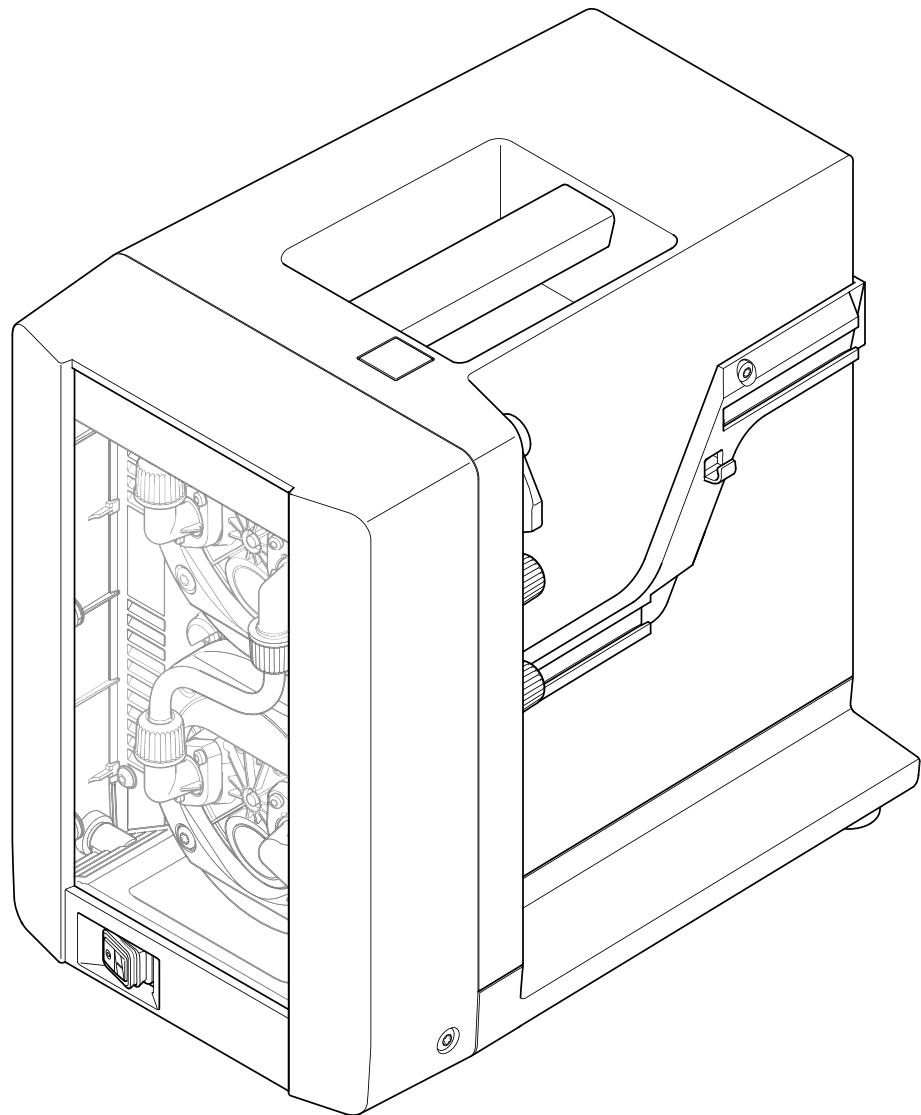




Vacuum Pump V-300

Technical data sheet

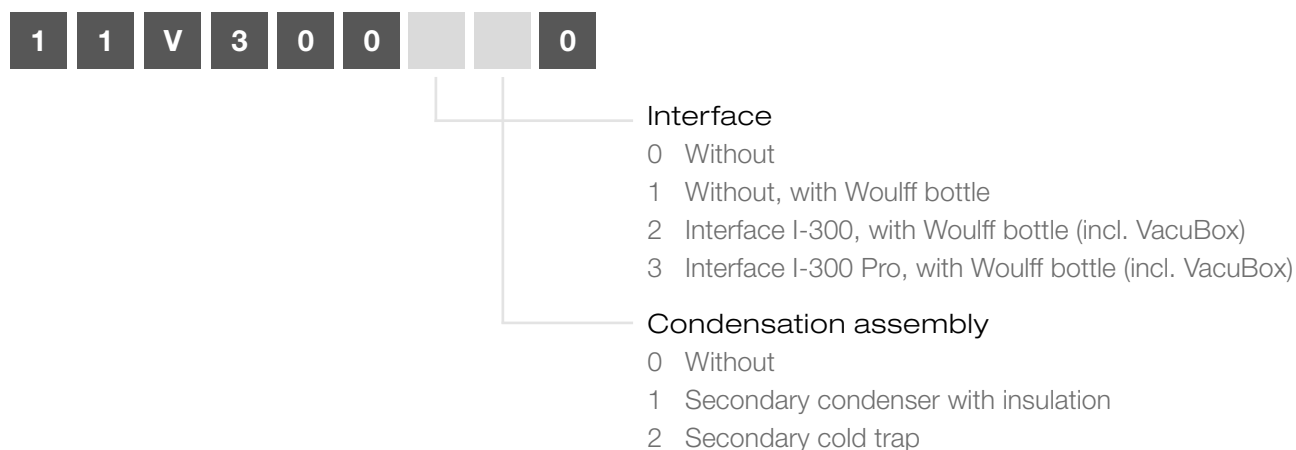
The Vacuum Pump V-300 is a chemically resistant PTFE diaphragm pump. The speed-controlled operation in conjunction with the Interface I-300 / I-300 Pro results in economical operation and very low noise emission. Thanks to the transparent front panel, contaminants are easily visible. It is optimally suited to work with the I-300 / I-300 Pro and R-300.



Order code

Two recommended solutions, “Rotavapor® Dynamic Pro and “Rotavapor® Dynamic”, with the Vacuum Pump V-300 in combination with the Rotavapor® R-300, the Interface I-300 I-300 Pro and the Recirculating Chiller F-308 can be found in the technical datasheet of the Rotavapor® R-300 “Exemplary solution” and in the “Laboratory Rotary Evaporation Solutions” brochure.

Choose the configuration according to your needs:



Scope of delivery

All vacuum pumps are delivered ready to use and are complete of:

Components	V-300
Vacuum Pump V-300	1
Vacuum tubing	1
Power cable	1
Silencer	1
Tubing connections (set)	1
Communication cable (Mini-DIN)	1
Membrane tool (to fasten and remove membrane)	1
Interface I-300 / I-300 Pro (incl. holder)	*
Woulff bottle	*
VacuBox (incl. communication cable)	*
Condensation assembly	*

* Optional, according to order code

Recommended combinations of Rotavapor® / vacuum systems

Available instruments	Recommended vacuum system
R-300 without Interface I-300 / I-300 Pro, without VacuBox, without Woulff bottle	V-300 with I-300, VacuBox and Woulff bottle
R-300 with I-300 / I-300 Pro and VacuBox and Woulff bottle	V-300 (incl. Woulff bottle)

Technical data

Vacuum Pump V-300	
Dimensions (WxHxD)	
Instrument V-300, silencer	200 x 321 x 291 mm
Shipping box without secondary assembly	585 x 370 x 385 mm
Shipping box with secondary assembly	585 x 540 x 385 mm
Weight	7.6 kg
Suction capacity	1.8 m³/h
Number of steps (heads)	2 (2)
Final vacuum (absolute)	5 mbar ± 2 mbar
Connections	GL14
Power consumption	180 W
Power consumption, energy saving mode 1 (80 %)	95 W
Power consumption, energy saving mode 2 (50 %)	60 W
Connection voltage	100 – 240 V, 50/60 Hz
Nominal speed	max. 1500 rpm
Sound level (EN 61010-1)	32 – 57 dBA (depending on operating mode) 32 dBA: with 10 % load (normal) 57 dBA: with 100 % load
Approvals	CE / CSA / CUS

Special features

Vacuum Pump V-300	
Inspection window	A large glass window at front side Allows to observe the two pump heads and membranes for eventual dirt particles
Power saving mode (without I-300 / I-300 Pro)	Pump automatically switches to power saving mode after a given operation time Reduces power consumption while maintaining same terminal vacuum

Vacuum Pump V-300

Level sensor (in combination with Interface I-300 / I-300 Pro only)	Warns of overflow into receiving flask of condenser/ secondary condenser When solvents reaches a certain level, a warning pops up at interface and is sent to smartphone/ tablet
Control two Rotavapor® systems in parallel	Operate two systems (in combination with 2 Interface I-300 only) Allows an upgrade to control two vacuum sources with two Rotavapor® systems simultaneously

Complementary products

Compatibility of the Vacuum Pump V-300 with vacuum controllers and interfaces of different generations

	Interface I-300 / I-300 Pro	Interface I-100	Vacuum Controller V-850 / V-855	Vacuum Controller V-800 / V-805
Pump V-300	speed controlled	regulated 038010* / 11060882*	regulated 038010* speed controlled 11060649	regulated 038010*

* power adapter 11060669 is needed

To connect a Vacuum Pump V-300 and an Interface I-300 or Interface I-300 Pro a VacuBox is needed. A VacuBox are included when ordering a Rotavapor® R-300 with Interface I-300 or an Interface I-300 compatibility pack.

To connect a Vacuum Pump V-300 to an Interface I-100, a Vacuum Controller V-850 / V-855 or a Vacuum Controller V-850 / V-855 a VacuBox and a LegacyBox is needed.

Explanation of terms

Regulated:	the peripheral (pump and chiller) is automatically turned On and Off via the interface -> ON/Off communication
Speed controlled:	the peripheral (pump) is turned On and Off as well as speed controlled via the interface

Vacuum pump accessories

	Order number
Holder. For valve unit/Woulff bottle To fasten valve unit or Woulff bottle.	11059908
Insulator. For secondary condenser (11059900) Insulation cover of the secondary condenser prevents condensation.	11059903
Communication cable. Mini-DIN to DC-Jack, 300 mm Meant to be used with 1 Vacuum Pump V-300 and 2 Rotavapor systems with the Interface I-300/I-300 Pro and Rotavapor of older generations. Connection between VacuBox and power adapter of the Interface I-300/I-300 Pro.	11062266
Communication cable. Mini-DIN, Y-piece, 2.0 m Meant to be used with 1 Vacuum Pump V-300 and 2 Rotavapor systems with the Interface I-300/I-300 Pro. Connection between VacuBox and Vacuum Pump V-300.	11062255

	Order number
Secondary condenser C. Cold trap, P+G-LT Condenses remaining vapors after the vacuum pump outlet. Used with ice/dry ice. Application temperature: -70 to 40	11060050
Secondary condenser V. Vertical condenser, incl. insulator Condenses remaining vapors after the vacuum pump outlet. Used along with a recirculating chiller or tap water. Content: 500 mL receiving flask, insulator for condenser, ball joint clamp, holder.	11059900
Tubing. FEP, Ø6/8 mm, transparent, per m Use: Vacuum, cooling media	027900
Tubing. Natural rubber, Ø6/16 mm, red, per m Use: Vacuum	017622
Tubing. Synthetic rubber, Ø6/13 mm, black, per m Use: Vacuum	11063244
Tubing. Nyflex, PVC-P, Ø8/14 mm, transparent, per m Use: Vacuum, cooling media, feeding (industrial Rotavapor)	004113
Tubing. PTFE, Ø8/10 mm, white, per m Use: Vacuum, feeding (industrial Rotavapor)	027277
Woulff bottle. 125 mL, P+G, incl. holder For trapping particles and droplets and for pressure equalization.	11059905

Additional glassware

Additional glassware (e.g. receiving flask for secondary condenser and cold trap) can be found in the “Laboratory Evaporation Glassware”-brochure.

Vacuum pump wear parts

	Order number
Seal. For cap nut GL14 to FEP, EPDM	038225
O-ring. For secondary condenser, FKM/FEP, Ø28.2/2.6 mm	11057661
Hose barbs. set. 2 pcs, bent (1), straight (1), GL14 silicone seal Content: Hose barbs, cap nut, screw caps seals	11061921
Hose barbs. set. 3 pcs, bent, GL14, silicone seal Content: Hose barbs, seals	041987
Hose barbs. set. 4 pcs, bent GL14, silicone seal Content: Hose barbs, cap nuts, seals	037287
Hose barbs. set. 4 pcs, bent, GL14, EPDM seal Content: Hose barbs, cap nuts, seals	043129
Hose barbs. set. 4 pcs, bent, GL14, FEP seal Content: Hose barbs, cap nuts, seals	040295
Hose barbs. set. 4 pcs, straight, GL14, EPDM seal Content: Hose barbs, cap nuts, seals	043128
Hose barbs. set. 4 pcs, straight, GL14, FPM seal Content: Hose barbs, cap nuts, seals	040296
Hose barbs. set. 4 pcs, straight, GL14, silicone seal Content: Hose barbs, cap nuts, seals	037642

Order number

Hose barbs. set. 6 pcs, bent (4), straight (2), GL14, silicone seal Content: Hose barbs, cap nuts, seals	038000
Screw caps. set. 5 pcs, GL14	040624
Set gas ballast. Incl. gas ballast, clip, lever	11062527
Set motor and belt. Motor with belt pully	11062528
Set wear part. Membranes, hose barbs Content: Membrane 2 pcs, support ring 2 pcs, valve 4 pcs, tube intake, tube connection, tube exhaust, elbow fitting 4 pcs, set hose barbs (11061921).	11062525
Cap nuts. set. 10 pcs, screw cap with hole GL14, seal EPDM Content: Hose barbs, cap nuts, seals	041999
Cap nuts. set. 10 pcs, screw cap with hole, GL14	041956

Function principles

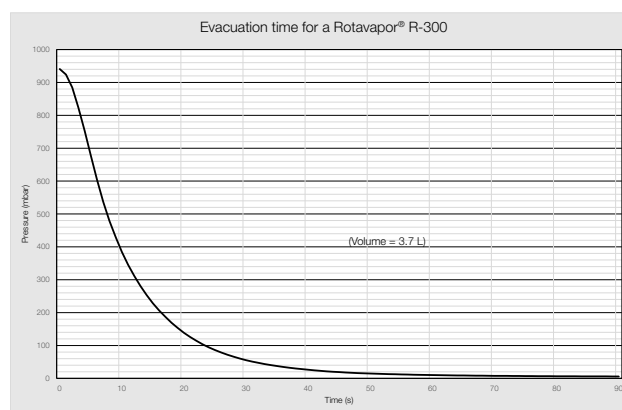
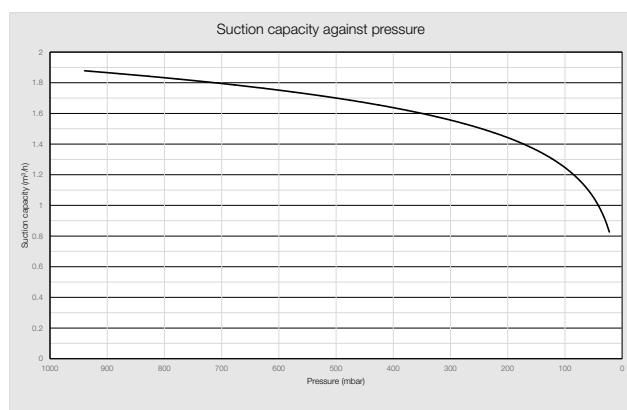
The diaphragm pump is a positive displacement pump that uses a combination of the reciprocating action of a PTFE diaphragm and non-return check valves. The eccentric module lets the diaphragm move strictly axial which leads to an increased service life.

Energy saving mode

This power saving mode is automatically activated in unregulated operation (as a standalone, without an Interface I-1-300 or I-300 Pro), hence the pump does not work at its full capacity. The energy saving mode is activated after 1 hour of operation, where the pump works at 80 %. After 2 hours, it reduces to 50 %. The suction capacity in the first hour is 1.8 m³/h, after 1 hour 1.6 m³/h and after 2 hours 1.0 m³/h. In the energy saving mode the pump consumes less electrical power and works under reduced stress, accordingly, the overall maintenance costs will be reduced over the lifetime of the pump.

Performance characteristics

The graph (left side) illustrates the suction capacity against the pressure. The V-300 has a good suction capacity also at a low vacuum. The graph (left side) shows suction capacity against pressure. The graph (right side) show the evacuation time of a laboratory evaporator.



Upgrades

Upgrade the Vacuum Pump V-300 to a speed controlled vacuum source

The Vacuum Pump V-300 can easily be upgraded to a controlled vacuum source by adding the Interface I-300 / I-300 Pro (incl. VacuBox and Woulff bottle).

Upgrade the Vacuum Pump V-300 to operate with 2 Rotavaor® systems

The Vacuum Pump V-300 can easily be upgraded to work with two vacuum loads via Interface I-300 / I-300 Pro simultaneously (ON/OFF communication, not speed controlled).