

Centrifugal vacuum concentrators:

LACEVAC-1C

LACEVAC4

LACEVAC6

LACEVAC7



COLO.SCIENCE • TECHNICAL SPECIFICATION

# LACEVAC6

**Vacuum Centrifugal Concentrator • Built-in Oil-free Pump • RT+5 °C to 100 °C • 800 to 2000 rpm • 30 Programs • 90 × 1.5 mL Rotor Included**

**LACEVAC6 Vacuum Centrifugal Concentrator** is the all-in-one model of the line: the oil-free vacuum pump is built into the housing, so one instrument stands on the bench and no separate pump is connected. It removes solvent from many small samples at once by combining three things: vacuum down to 13 mbar lowers the boiling point, heat from RT+5 °C to 100 °C drives the evaporation, and centrifugal force at 800 to 2000 rpm keeps the liquid at the bottom of the tube, so samples do not bump or cross-contaminate. Time and temperature are set in two steps, 30 programs can be stored and four quick keys start the routine ones. The chamber is PTFE-coated stainless steel with a glass window. The rotor for 90 × 1.5 mL tubes is included; seven more rotors take tubes up to 50 mL and microplates.

VACUUM + HEAT + CENTRIFUGATION

BUILT-IN OIL-FREE PUMP

≤ 13 MBAR

RT+5 °C TO 100 °C

800 TO 2000 RPM

30 PROGRAMS

PTFE-COATED CHAMBER

8 ROTORS

COLD TRAP OPTION

Document type: **Technical Specification Sheet**

Product: **LACEVAC6 Vacuum Centrifugal Concentrator • with built-in vacuum pump**

SKU: **PRO5881**

Format: **A4 landscape • CORE-TECHSPEC 1.2**

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 **HEATING ONLY** RT+5 °C to 100 °C



LACEVAC6 • built-in pump, LCD panel with time, temperature and vacuum



Chamber with rotor seen through the glass window

MODEL

LACEVAC6 • PRO5881

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# LACEVAC6 • technical specification

All-in-one vacuum centrifugal concentrator, built-in oil-free pump, final vacuum  $\leq 13$  mbar, RT+5 °C to 100 °C, 800 to 2000 rpm, 30 programs, rotor 90 × 1.5 mL included, optional cold trap –50 °C

BUILT-IN PUMP

 $\leq 13$  MBAR

RT+5 °C TO 100 °C

800–2000 RPM

30 PROGRAMS

COLD TRAP –50 °C

— One instrument on the bench

## Product Overview

### Application profile

**DNA and RNA:** drying of precipitates and concentration of eluates and oligonucleotides.

**Proteins and peptides:** concentration of digests, fractions and synthesis samples.

**HPLC and SPE:** recovery of collected fractions and eluates.

**Routine work with several solvents:** stored programs for water and for ethanol solutions.

**Plates:** drying of two 96-well microplates in one run.

### Key features

**Control:** 5.7-inch LCD panel; start and stop with one button each.

**Programs:** 30 user programs and 4 quick keys; programs for water and for ethanol solutions.

**Two steps:** two times and two temperatures in one run.

**Speed:** 800 to 2000 rpm, adjustable; 530 × g.

**Temperature:** RT+5 °C to 100 °C; separate key for pre-heating the chamber.

**Pump:** built-in, oil-free, PTFE head; it starts only after the rotor reaches speed.

**End of run:** automatic venting and switch-off; venting also after a power failure.

**Build:** stainless steel chamber with PTFE coating, glass window, digital vacuum gauge.

### Why vacuum centrifugal concentration

**No bumping:** centrifugal force holds the liquid down while it boils under vacuum.

**No cross-contamination:** every sample stays in its own tube.

**Gentle:** low boiling point under vacuum, heat only as much as needed.

**Dry pellet at the bottom:** the sample collects where you can dissolve it again.

**Many samples:** 90 tubes of 1.5 mL per rotor, up to 180 with two rotors stacked.

### Core technical summary

| Parameter         | Specification                                  |
|-------------------|------------------------------------------------|
| Model             | LACEVAC6                                       |
| Product type      | Vacuum centrifugal concentrator, built-in pump |
| Speed             | 800 to 2000 rpm, 530 × g                       |
| Temperature range | RT+5 °C to 100 °C                              |
| Timer             | 0 to 9999 min                                  |
| Vacuum pump       | built-in, oil-free, 33 L/min                   |
| Final vacuum      | $\leq 13$ mbar                                 |
| Rotors            | 90 × 1.5 mL included; 7 optional               |
| Cold trap         | option, –50 °C, 2 L                            |

TEMPERATURE

RT+5 °C to 100 °C

SPEED

800–2000 rpm

FINAL VACUUM

 $\leq 13$  mbar

CAPACITY

up to 180 × 1.5 mL

RT = room temperature. 13 mbar is absolute pressure, the final vacuum of the built-in pump. The cold trap and the optional rotors are ordered separately. Tubes and samples are not part of the instrument. Suitability for a specific solvent and method is confirmed in the COLO.Science quotation.

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## Technical Specifications

| Parameter                    | LACEVAC6                                | Parameter              | LACEVAC6                         |
|------------------------------|-----------------------------------------|------------------------|----------------------------------|
| Speed                        | 800 to 2000 rpm, adjustable             | Chamber                | stainless steel 304, PTFE-coated |
| Maximum centrifugal force    | 530 × g                                 | Lid                    | with glass window                |
| Temperature setting range    | RT+5 °C to 100 °C                       | Drive                  | magnetic, induction motor        |
| Time range                   | 0 to 9999 min; two steps                | Rotors                 | 8 types; 90 × 1.5 mL included    |
| Programs                     | 30 user programs, 4 quick keys          | Noise                  | ≤ 60 dB(A)                       |
| Display                      | 5.7-inch LCD; digital vacuum gauge      | Supply                 | AC 220 V, 50/60 Hz, 660 W        |
| Vacuum pump                  | built-in diaphragm pump, PTFE, oil-free | Dimensions (L × W × H) | 608 × 370 × 348 mm               |
| Final vacuum · pumping speed | ≤ 13 mbar · 33 L/min                    | Weight                 | 38 kg                            |

RT = room temperature; the range starts 5 °C above the temperature of the room the instrument stands in. Place of use: 5 °C to 32 °C, relative humidity up to 85 %.

## Rotors

| Tubes                     | Capacity                | Tubes              | Capacity    |
|---------------------------|-------------------------|--------------------|-------------|
| Microtubes · included     | 90 × 1.5 mL or 2 mL     | Round-bottom tubes | 72 × 5 mL   |
| Microtubes and 5 mL tubes | 66 × 1.5 mL + 24 × 5 mL | Conical tubes      | 18 × 15 mL  |
| PCR strips                | 24 × 8 × 0.2 mL         | Conical tubes      | 8 × 50 mL   |
| Sample vials              | 64 × 2 mL               | Microplates        | 2 × 96-well |

One rotor for 90 × 1.5 mL tubes is supplied with the instrument. The other rotors are ordered separately; their product codes are stated in the quotation. Two rotors can be stacked. Tubes stay open during the run.

### Version and options

**Built-in pump:** PRO5881; oil-free diaphragm pump with PTFE head inside the housing, 33 L/min, final vacuum ≤ 13 mbar.

**Second rotor:** two rotors can be stacked, for up to 180 tubes of 1.5 mL in one run.

**Cold trap:** PRO7173, -50 °C, 2 L; condenses the vapour before it reaches the pump. Recommended with organic solvents.

**Not sure?** send the solvent and the volume; we will state the rotors and the options in the quotation.

### Run sequence

**1 · Rotor:** place the rotor on the drive shaft.

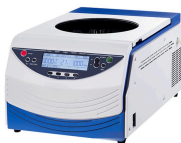
**2 · Load:** place the open tubes symmetrically and close the lid.

**3 · Run:** choose a program or set time and temperature, and press start; the pump starts after the rotor.

**4 · End:** at the end of the time the pump switches off, the chamber is vented and the rotor stops.

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## The line at a glance • centrifugal vacuum concentrators

| Parameter                |  <p><b>LACEVAC-1C</b><br/>compact · external pump</p> |  <p><b>LACEVAC4</b><br/>programmable · external pump</p> |  <p><b>LACEVAC6</b><br/>all-in-one · built-in pump</p> |  <p><b>LACEVAC7</b><br/>touch screen · without or with built-in pump</p> |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vacuum pump              | external; without or with pump                                                                                                         | external; without or with pump                                                                                                             | <b>built-in, 33 L/min</b>                                                                                                                 | without pump or built-in, 2 L/min; stronger external pump as option                                                                                         |
| Vacuum                   | 5 mbar with pump                                                                                                                       | 5 mbar with pump                                                                                                                           | ≤ 13 mbar                                                                                                                                 | built-in pump: -80 to -89 kPa in work, -92 kPa final (about 90 mbar);<br>optional external pump: 5 mbar                                                     |
| Vacuum display / control | analogue gauge; on/off                                                                                                                 | digital; set value 0.1 to 100 mbar                                                                                                         | <b>digital gauge; on/off</b>                                                                                                              | digital value on the touch screen; on/off                                                                                                                   |
| Speed                    | 1800 rpm, fixed                                                                                                                        | 800 to 2000 rpm                                                                                                                            | <b>800 to 2000 rpm</b>                                                                                                                    | 300 to 2000 rpm                                                                                                                                             |
| Centrifugal force        | 380 × g                                                                                                                                | 530 × g                                                                                                                                    | <b>530 × g</b>                                                                                                                            | —                                                                                                                                                           |
| Temperature              | RT+5 °C to 70 °C                                                                                                                       | RT+5 °C to 100 °C                                                                                                                          | <b>RT+5 °C to 100 °C</b>                                                                                                                  | RT+5 °C to 80 °C                                                                                                                                            |
| Operation                | one button, quick temperature keys                                                                                                     | LCD, two-step time and temperature                                                                                                         | <b>LCD, two-step time and temperature, 30 programs</b>                                                                                    | 7-inch touch screen                                                                                                                                         |
| Rotor in delivery        | 66 × 1.5 mL                                                                                                                            | 90 × 1.5 mL                                                                                                                                | <b>90 × 1.5 mL</b>                                                                                                                        | none; chosen with the order                                                                                                                                 |
| Largest tube             | 50 mL                                                                                                                                  | 100 mL                                                                                                                                     | <b>50 mL</b>                                                                                                                              | 100 mL                                                                                                                                                      |
| Microplates              | —                                                                                                                                      | 2 × 96-well                                                                                                                                | <b>2 × 96-well</b>                                                                                                                        | 2 × 96-well                                                                                                                                                 |
| Dimensions (L × W × H)   | 350 × 280 × 290 mm                                                                                                                     | 481 × 370 × 294 mm                                                                                                                         | <b>608 × 370 × 348 mm</b>                                                                                                                 | 580 × 360 × 330 mm                                                                                                                                          |
| Weight                   | 18 kg                                                                                                                                  | 28.5 kg                                                                                                                                    | <b>38 kg</b>                                                                                                                              | 44 kg                                                                                                                                                       |
| Best for                 | small laboratories, 1.5 mL tubes, limited space                                                                                        | methods that need a set vacuum; high-boiling solvents                                                                                      | <b>one instrument on the bench, no separate pump</b>                                                                                      | water and volatile solvents, large tubes, plates                                                                                                            |

The column of this document is highlighted. The external pump for all models is VACUU-CDT30, 30 L/min, 5 mbar. Every model can be combined with the cold trap -50 °C. Values are supplier data; rotors other than the one in delivery, pumps and cold trap are ordered separately.

### Options for every model



#### Vacuum pump VACUU-CDT30 · PRO3633

Diaphragm pump with two PTFE heads, oil-free and maintenance-free. 30 L/min, final vacuum 5 mbar, 140 W, 10 kg. For models without a pump, and as a stronger pump for models with a built-in one.



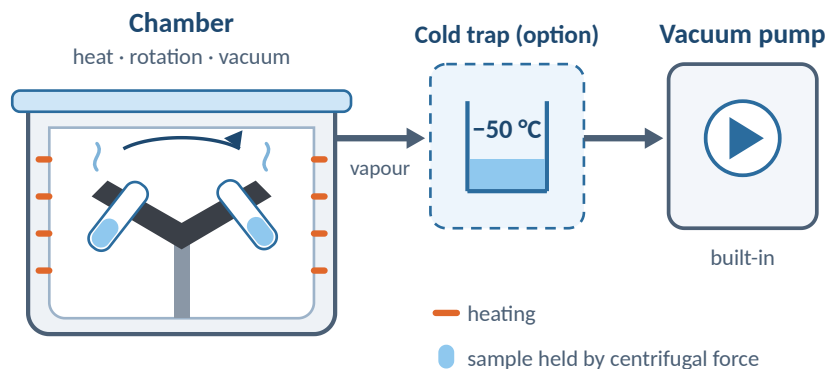
#### Cold trap -50 °C, 2 L

Stands between the concentrator and the pump, freezes the solvent vapour and protects the pump. Recommended with organic solvents.

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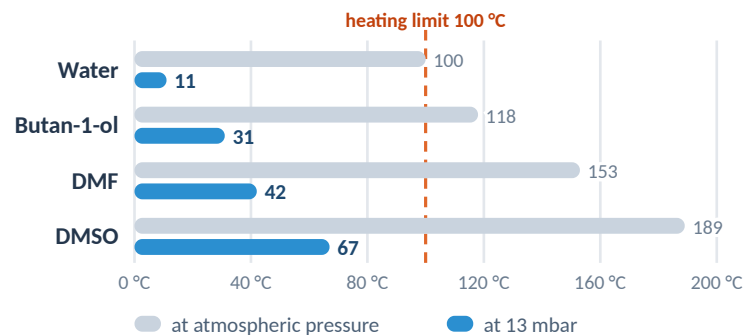
## Vacuum Path and Options

### From the chamber to the pump



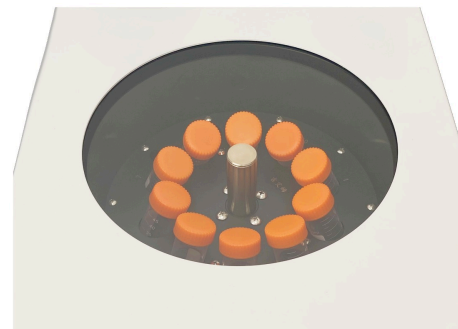
Schematic. Vapour leaves the heated, rotating chamber, condenses in the cold trap if one is fitted, and the built-in pump keeps the vacuum.

### Boiling point under vacuum



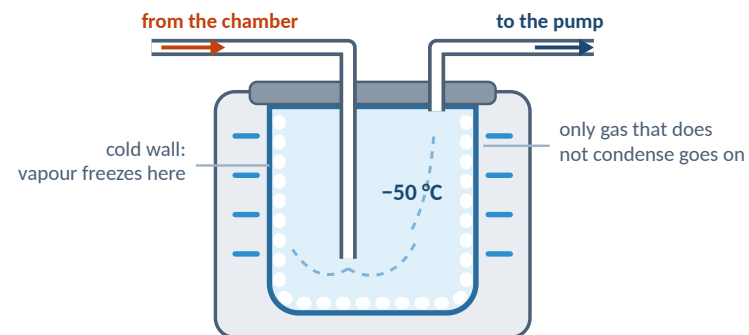
Calculated, rounded values at the final vacuum of the built-in pump; the pressure in the chamber during a run is higher. At 13 mbar water boils at about 11 °C instead of 100 °C, so water and volatile solvents evaporate with little heating.

### Chamber with rotor



View through the glass window: rotor with tubes in the PTFE-coated chamber. The run can be watched at any time.

### How the cold trap works



**Protects the pump:** solvent vapour freezes on the cold wall instead of reaching the pump.

**Faster drying:** vapour is removed all the time, so the pressure in the chamber stays low.

**In use:** switch the trap on first and start the run when it is cold; defrost and drain it when ice has built up.

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LACEVAC6 with the optional cold trap -50 °C, 2 L

#### Ordering information

| Item                                                         | Value                                              |
|--------------------------------------------------------------|----------------------------------------------------|
| LACEVAC6 vacuum centrifugal concentrator, with built-in pump | PRO5881                                            |
| Optional rotors                                              | 7 types, see quotation                             |
| Cold trap -50 °C, 2 L                                        | PRO7173                                            |
| Delivery                                                     | Instrument, rotor 90 × 1.5 mL, mains cable, manual |

#### Configuration checklist

**Solvent:** water and common organic solvents; tell us if acids are used.

**Tubes:** type and number per run decide the rotors.

**Temperature:** within RT+5 °C to 100 °C and safe for the sample.

**Cold trap:** recommended with organic solvents; it protects the built-in pump.

**Place of use:** 608 × 370 mm footprint, 38 kg; stable, level bench.

#### SUPPLIER AND SUPPORT

### COLO Lab Experts

Polje ob Sotli 4, SI-3255, Slovenia

**Selection guidance:** Send the solvent, the tube type, the volume and the number of samples per run. COLO.Science will confirm the rotors, the options and the delivery time.

#### QUICK CONTACT

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#### COLO.SCIENCE · SAMPLE CONCENTRATION SUPPORT

### Which rotors for your samples?

Send the solvent, the tube type, the volume and the number of samples per run. COLO.Science will confirm the rotors, the options and the delivery time.

Web: [colo.si](http://colo.si)

Ask us:

Price and current discount, delivery time, application support and service — write to [sales@colo.si](mailto:sales@colo.si) or call us.

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