

memmert

trust the best



Vacuum Oven

VO

Powerful. Gentle. Turbo fast.

VO | WHY A MEMMERT VACUUM OVEN?

- pressure reduction lowers the boiling point of water → water can already evaporate at temperatures below 100 °C
- drying processes at low temperatures
- gentle on the load

vapor pressure table of water

| Torr | mbar | °C |
|--------|-------|----|
| 3.008 | 4.009 | -5 |
| 4.579 | 6.10 | 0 |
| 6.543 | 8.72 | 5 |
| 9.209 | 12.27 | 10 |
| 12.788 | 17.05 | 15 |
| 17.535 | 23.37 | 20 |
| 23.756 | 31.66 | 25 |
| 31.824 | 42.42 | 30 |
| 42.175 | 56.21 | 35 |
| 55.324 | 73.74 | 40 |
| 71.880 | 95.81 | 45 |
| 92.510 | 157.3 | 50 |

At a pressure of approx. 50 mbar the boiling point of water is approx. 33 °C.

VO | TECHNICAL DATA



VO29
29 l



VO49
49 l

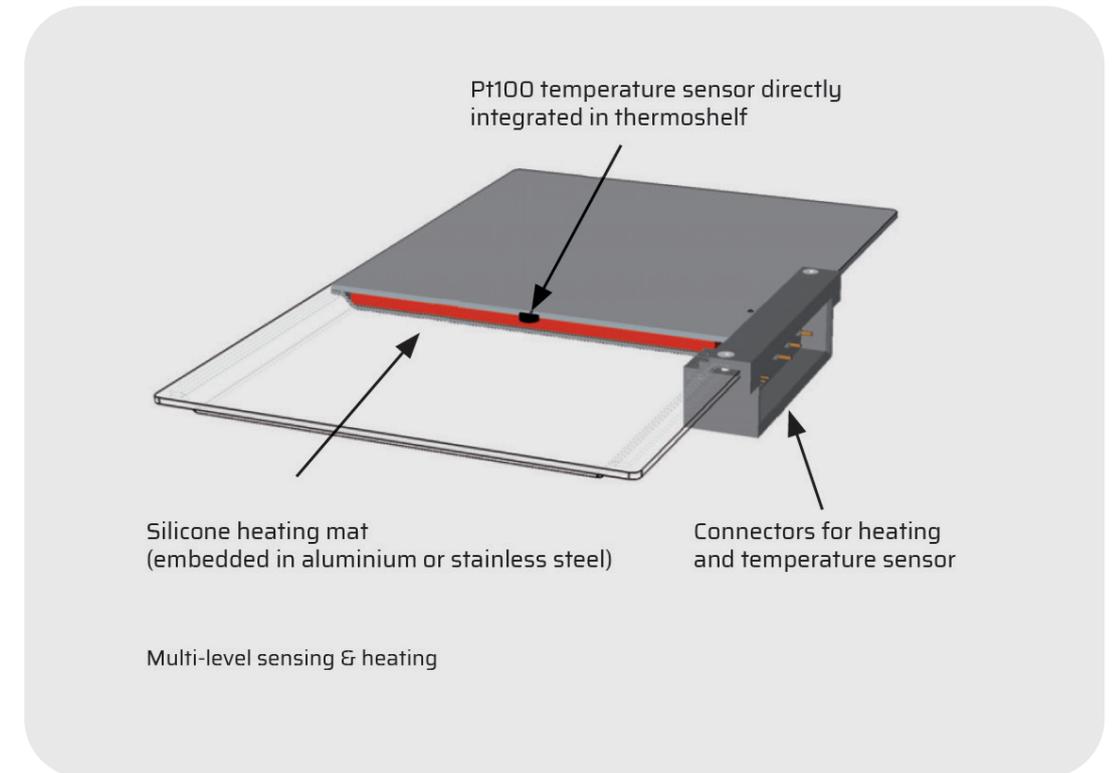


VO101
101 l

| Model sizes / Description | 29 | 49 | 101 |
|--------------------------------|--|----|-----|
| Working temperature range (°C) | at least 5 above ambient temperature to +200 | | |
| Setting temperature range (°C) | +20 to +200 | | |
| Setting pressure range (mbar) | 5 to 1100 | | |

VO | HEATING SYSTEM MULTI-LEVEL-SENSING & HEATING

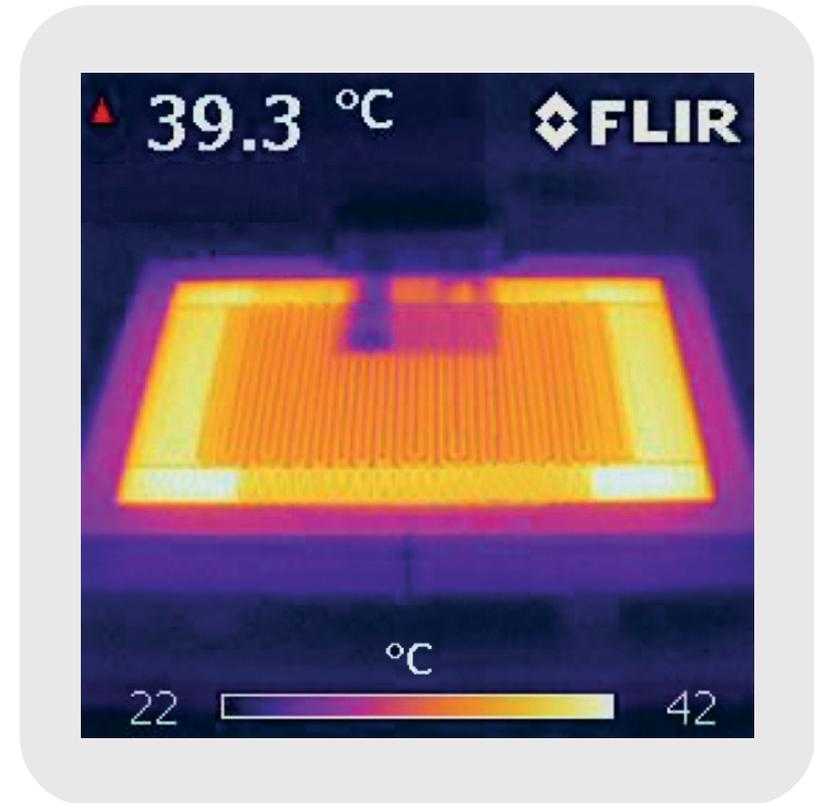
- direct contact between heating and loading and thus practically no heat loss
- precise temperature control and calibration due to a separate temperature sensor per thermoshelf
- automatic, individual heating power adjustment for each thermoshelf
- short heating-up-time and overall process times



VO | HEATING SYSTEM TEMPERATURE DISTRIBUTION*

| Temperature | Deviation [+/- K] | | |
|-------------|--------------------|--------|--------|
| | V029 | V049 | V0101 |
| 50 °C | +/-0,7 | +/-0,7 | +/-0,7 |
| 100 °C | +/-1,5 | +/-1,0 | +/-1,3 |
| 150 °C | +/-2,0 | +/-1,5 | +/-2,0 |
| 200 °C | +/-2,5 | +/-2,0 | +/-2,5 |

* Measured with an aluminum thermoshelf at 20 mbar.



PMP/VO | TECHNICAL DATA



PMP29



PMP49



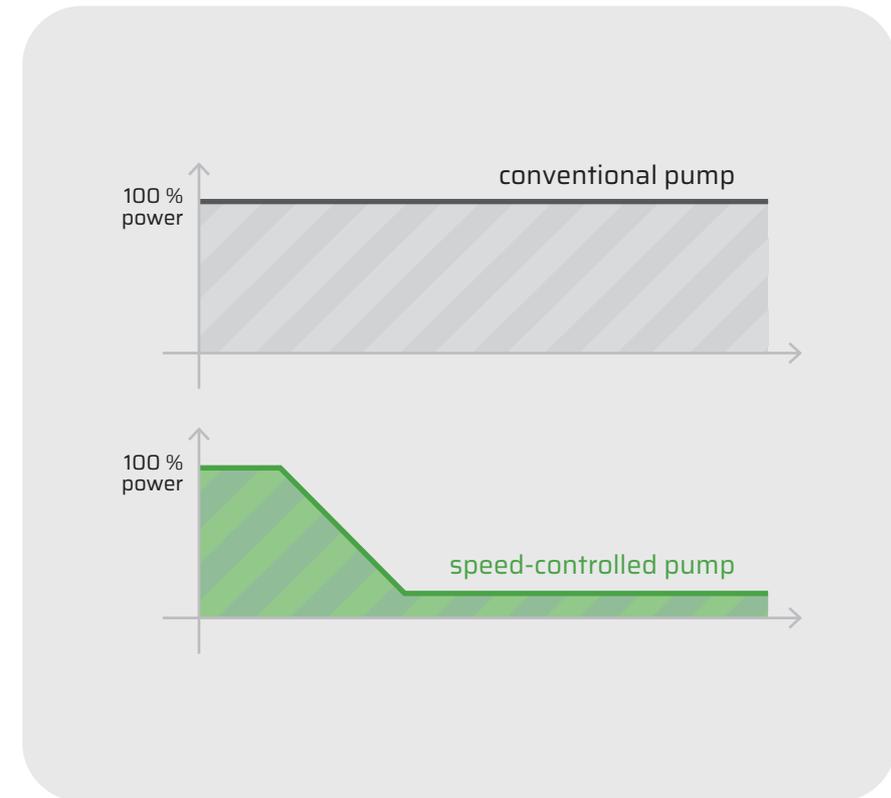
PMP101

- noise-insulated vacuum pump module
- speed-controlled vacuum pump
- chemically resistant diaphragm pump
- energy efficient



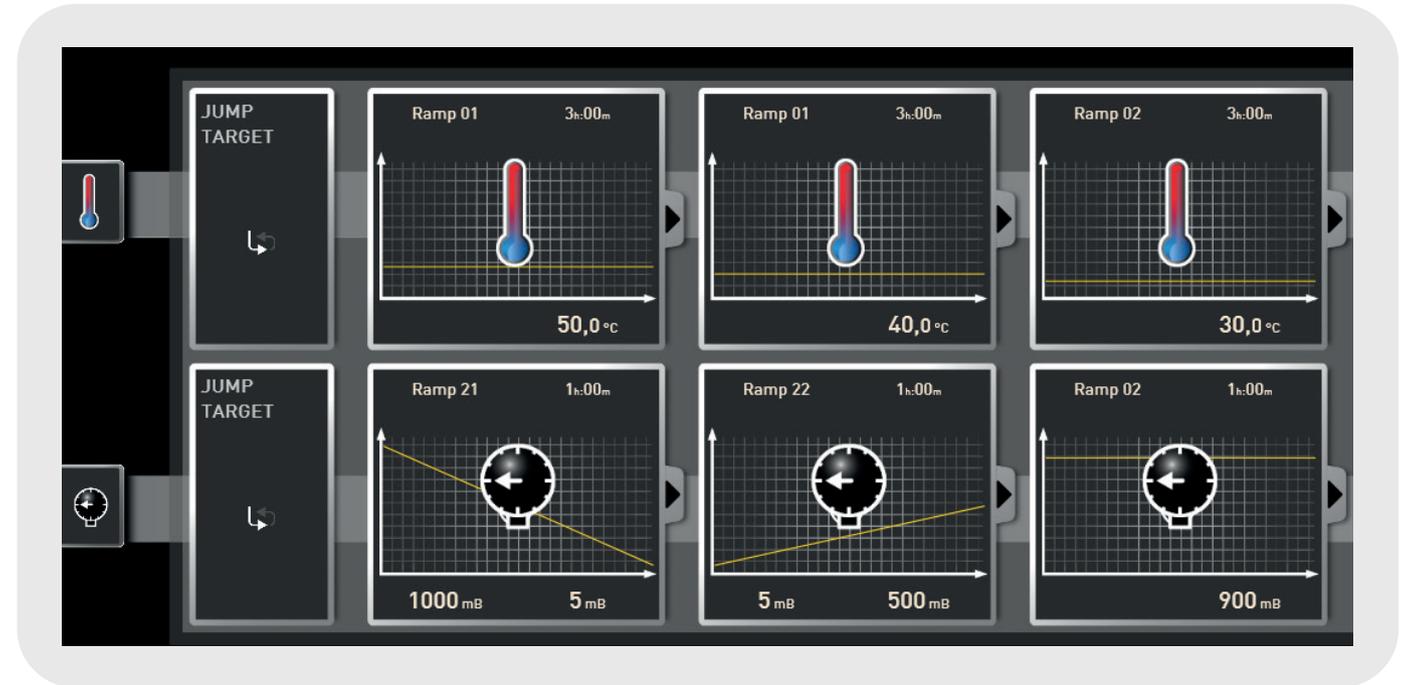
VO | VACUUM PUMP

- low-noise, speed-controlled vacuum pump is automatically detected by any vacuum oven
- high-precision control to setpoint
- 70% energy saving compared to conventional vacuum pumps in ramp operation



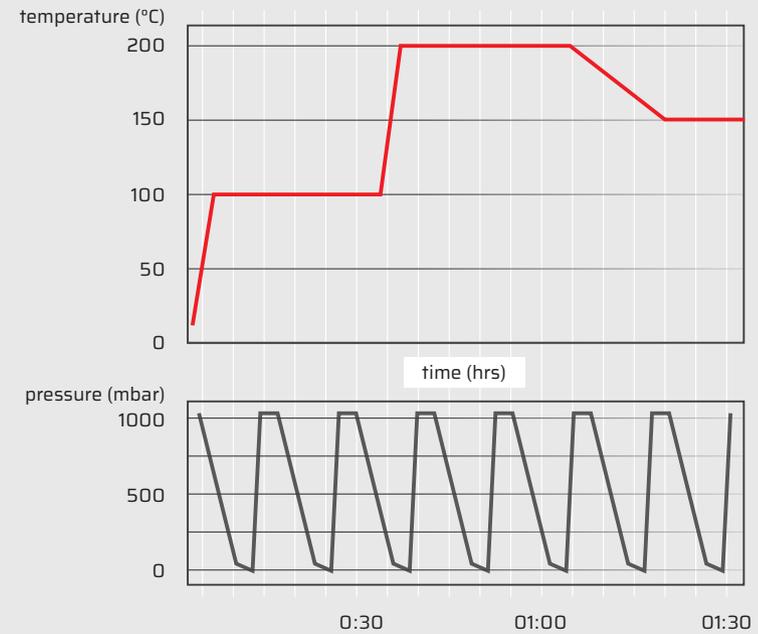
VO | AtmoCONTROL

- intuitive programming of different temperature and vacuum setpoints
- display of all logged set and actual values
- archiving of ramps and program sequences

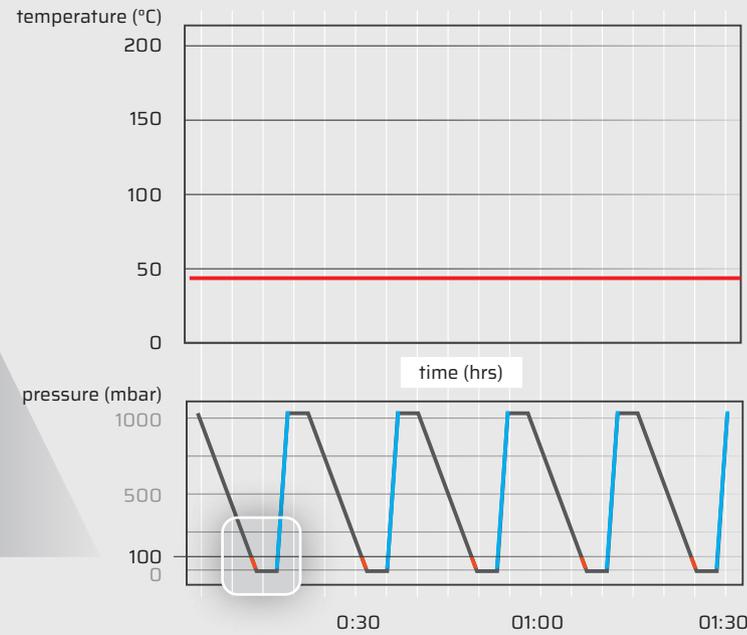
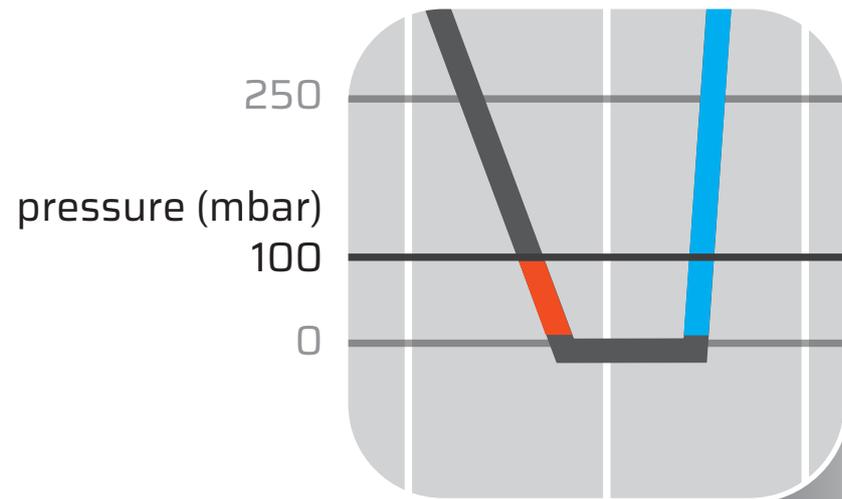


VO | AtmoCONTROL

- programming of temperature-pressure-cycles



VO | TURBO-DRYING



VO | CALIBRATION / ADJUSTMENT OF EACH THERMOSHELF BY USING AtmoCONTROL



Level 4: CAL2 100 °C -0,4 K

Level 3: CAL2 100 °C +0,5 K

Level 2: CAL2 100 °C +0,8 K

Level 1: CAL2 100 °C -0,7 K

Calibrating Heating Shelves

1) Get calibration data from device

2) Select a heating shelf

3) Define calibration data

| Calibration Temperature | Calibration Correction |
|-------------------------|------------------------|
| 50 | -0.111 |
| 100 | -0.7 |
| 200 | 0.1 |

4) Save calibration data to device

5) Quit calibration or return to step 2

VO | APPLICATIONS

- **Pharmaceutical industry:** powder and granulate drying, determination of water content for quality assurance

- **Medical technology:** drying of titanium powder for orthopedic materials

- **Food industry:** drying of cultures and probiotics, drying of fruit and fruits, preservation and dehydration of food

- **Electronic industry:** drying of components and printed circuit boards



VO | GOOD REASONS FOR THE MEMMERT VACUUM OVEN

- Gentle and turbo fast

- Intelligent direct heating with calibration function.

- Short heating-up-time

- Enormous energy saving due to stepless adjustable, speed-controlled vacuum pump

- Short process times thanks to digitally controlled vacuum cycles

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