

## Determination of the Power Consumption used for Sous-Vide cooking over 18 hours, using open bath circulator models ED-27 and ME-27

### Objective

Determination of power consumption of the open heating bath circulators ED-27 and ME-27 with bath cover by Sous Vide cooking of marinated beef at a setpoint temperature of 65° C for 18 hours.

### Test Description

For this case study two vacuum bags with marinated beef were cooked - one bag contained rolled beef (1.596 kg), the second bag a beef tri-tip (1.198 kg). Both joints were marinated in vinegar for 3 days, sautéed and then sealed. At a starting temperature of 15° C the joints (3° C core temperature) were placed in the bath and the setpoint temperature was set to 65° C.

The meat was cooked for 18 hours at 65° C. In order to exactly determine the power consumption costs each joint was placed in a separate bath.

### Test Conditions

Units:	ED-27 with bath cover ME-27 with bath cover
Voltage:	230 Volt / 50 Hz
Ambient temperature:	22-25 °C (room temperature)
Medium:	water
Unit specifications:	Setpoint 65° C



## RESULTS

### Open Heating Bath circulator ED-27

- Power consumption for 18 hours of cooking: 4.37 kWh
- Power consumption costs at a price of 0.22 € per kWh: 0.96 €
- Projection of power consumption costs for 24 hours: 1.28 €

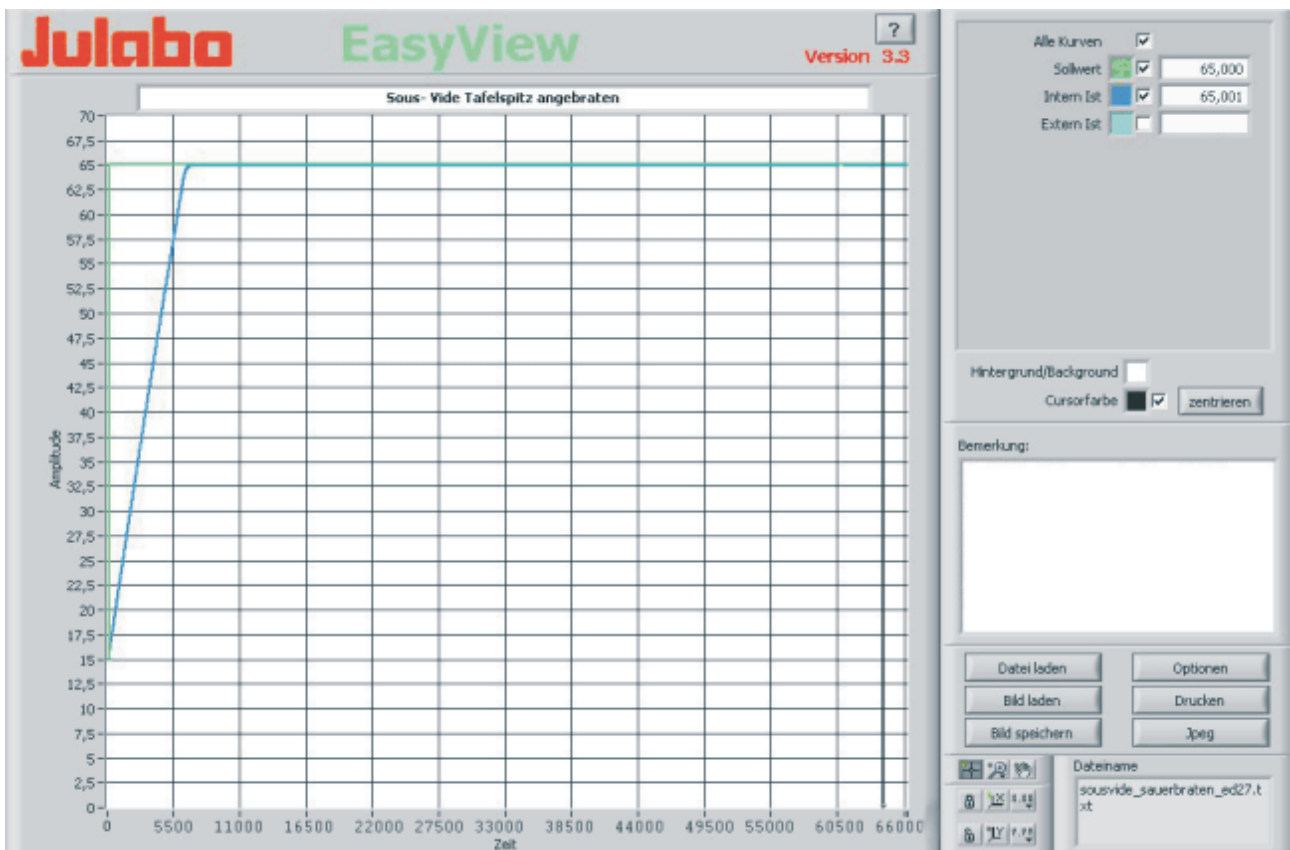
### Open Heating Bath circulator ME-27

- Power consumption for 18 hours of cooking: 3.97 kWh\*
- Power consumption costs at a price of 0.22 € per kWh: 0.87 €
- Projection of power consumption costs for 24 hours: 1.16 €

\* During the entire procedure the bath circulator ME-27 consumed approx. 400 Watt less energy. This can be attributed to the higher heat input of the pump

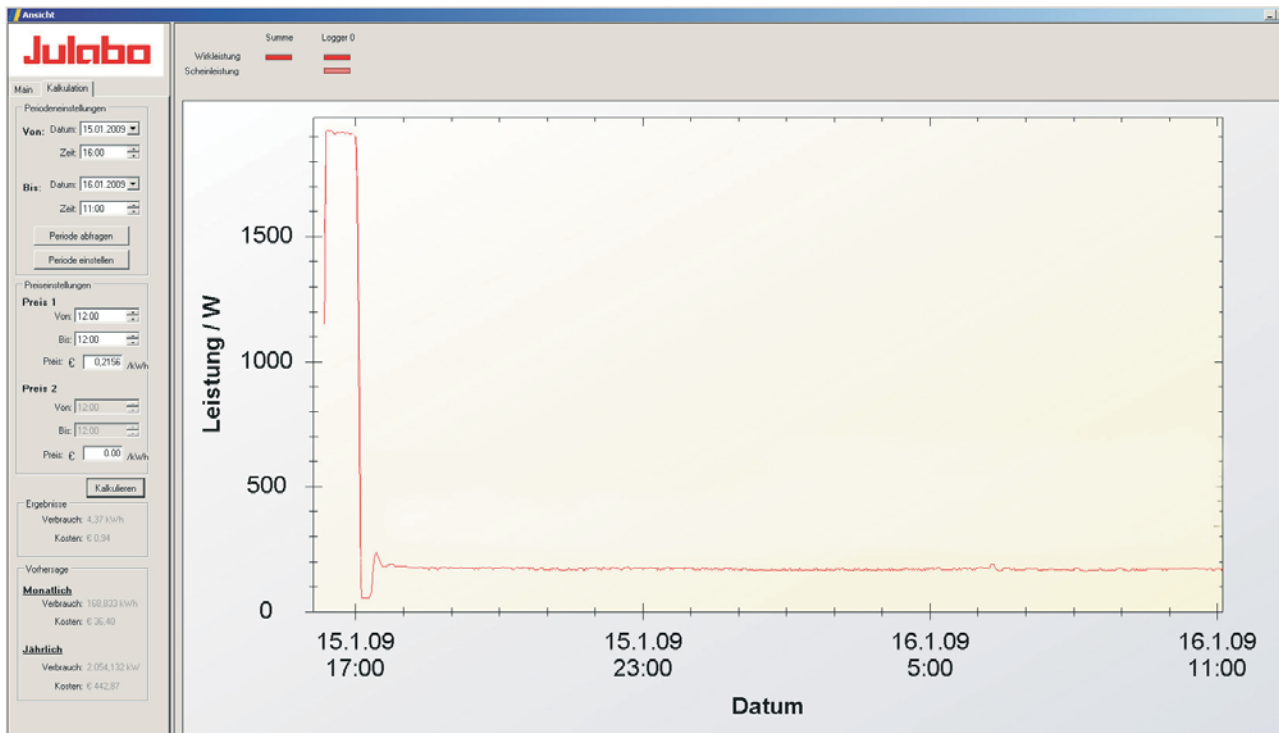
Description

The following diagram shows the heat-up phase and the temperature sequence for the entire cooking time:



### Description

The power consumption was determined with an energy-logger and represents itself as follows:



### After attainment of the setpoint temperature of 65° C:

- continuous power consumption of 200 Watt or 0.200 kWh respective (per hour)
- Power consumption costs:
  - in 1 hour (0.200 kWh x 0.22 €): **0.04 €**
  - in 24 hours (4.8 kWh x 0.22 €): **1.05 €**